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*3 Bear Delaware Operating-NM, LLC
Anaconda 11-14 and Anaconda 11 ROW Project in
Lea County, New Mexico*

BLM Serial No. NM-139574

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LIST OF ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
3 Bear	3 Bear Delaware Operating-NM, LLC
ACEC	Area of Critical Environmental Concern
AMS	Analysis of the Management Situation
amsl	above mean sea level
BISON-M	Biota Information System of New Mexico
BLM	Bureau of Land Management
CAA	Clean Air Act
CCA	Candidate Conservation Agreement
CFO	Carlsbad Field Office
CFR	Code of Federal Regulations
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
COA	condition of approval
CWA	Clean Water Act
EA	environmental assessment
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973
FEMA	Federal Emergency Management Agency
GHG	greenhouse gas
GIS	geographic information system
H ₂ S	hydrogen sulfide
HAP	hazardous air pollutant
HDPE	high-density polyethylene
HUC	Hydrologic Unit Code
IM	Instruction Memorandum
IPCC	Intergovernmental Panel on Climate Change
LPC	lesser prairie-chicken
MBTA	Migratory Bird Treaty Act of 1918
MLA	Mineral Leasing Act of 1920
MOU	Memorandum of Understanding
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NATA	National Air Toxics Assessment
NEPA	National Environmental Policy Act of 1969
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act of 1966

NMAAQS	New Mexico Ambient Air Quality Standards
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
NMOSE	New Mexico Office of the State Engineer
NMPM	New Mexico Principal Meridian
NO ₂	nitrogen dioxide
NO _x	nitrogen oxide(s)
NRCS	Natural Resources Conservation Service
NWP	Nationwide Permit
O ₃	ozone
OHWM	ordinary high-water mark
Pb	lead
PBPA	Permian Basin Programmatic Agreement
PFYC	Potential Fossil Yield Classification
PM _{2.5}	particulate matter equal to or less than 2.5 microns in diameter
PM ₁₀	particulate matter equal to or less than 10 microns in diameter
project	Anaconda 11-14 and Anaconda 11 ROW Project
RMP	Resource Management Plan
RMPA	Resource Management Plan Amendment
ROW	right-of-way
SDA	special designation area
SLO	New Mexico State Land Office
SO ₂	sulfur dioxide
SOPA	Secretary's Potash Area
SWCA	SWCA Environmental Consultants
TCP	traditional cultural property
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1 PURPOSE AND NEED FOR ACTION

1.1 Background

3 Bear Delaware Operating-NM, LLC (3 Bear) submitted a Standard Form 299 Application for the Transportation and Utility Systems and Facilities on Federal Lands to the Bureau of Land Management (BLM) Carlsbad Field Office (CFO) for the Anaconda 11-14 and Anaconda 11 right-of-way (ROW) Project (Proposed Action, or project). The purpose of the project is to construct, operate, and maintain a pipeline gathering system consisting of one 10-inch-nominal-diameter steel gas pipeline, one 4-inch-diameter nominal high-density polyethylene (HDPE) steel oil pipeline, and one 10-inch-nominal-diameter HDPE water pipeline, all buried in one or two trenches as detailed below. The proposed pipeline would be a linear ROW totaling approximately 4.5 miles (23,516 feet) long and 30 feet wide to service two well pads, Anaconda 11-14 Federal and Anaconda 11 Federal. Within the proposed ROW, the requested gas pipeline would extend west and then north 2.6 miles (15,472 feet) from the Anaconda 11 Federal well pad to 3 Bear's Jade Lateral. The requested oil and water pipelines would extend eastward to 3 Bear's Lariat Lateral from the Anaconda 11-14 well pad for 1.5 miles (9,819 feet). Between the two well pads, the three pipelines would be co-located in two trenches spanning 0.3 mile (1,775 feet). 3 Bear is also requesting a 20-foot-wide temporary workspace for the proposed pipeline, for a total disturbance width of 50 feet.

The proposed project crosses land administered by the BLM (3.6 miles; 18,898 feet) and private land (0.9 mile; 4,618 feet) in Lea County, New Mexico. The BLM CFO–assigned case file number for the proposed project is **NM-139574**.

- **The total permanent ROW acreage on BLM lands is 16.2 acres.**

The BLM CFO would serve as the lead federal agency for the undertaking. The proposed project would be located in Lea County, New Mexico, approximately 29 miles southwest of the city of Hobbs (Figure 1.1).

The legal land description (New Mexico Principal Meridian [NMPM]) for the permanent ROW is provided below.

BLM Land

Township (T.) 19 South (S.), Range (R.) 33 East (E.), NMPM

Section (sec.) 34: SE $\frac{1}{4}$ SE $\frac{1}{4}$;

T. 20 S., R. 33 E., NMPM

sec. 1: SE $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$;

sec. 3: Lot 1, SE $\frac{1}{4}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$;

sec. 10: NE $\frac{1}{4}$ NE $\frac{1}{4}$;

sec. 11: N $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ NE $\frac{1}{4}$, N $\frac{1}{2}$ NW $\frac{1}{4}$;

sec. 12: N $\frac{1}{2}$ NW $\frac{1}{4}$.

Private Land

T. 19 S., R. 33 E., NMPM

sec. 34: E $\frac{1}{2}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$.

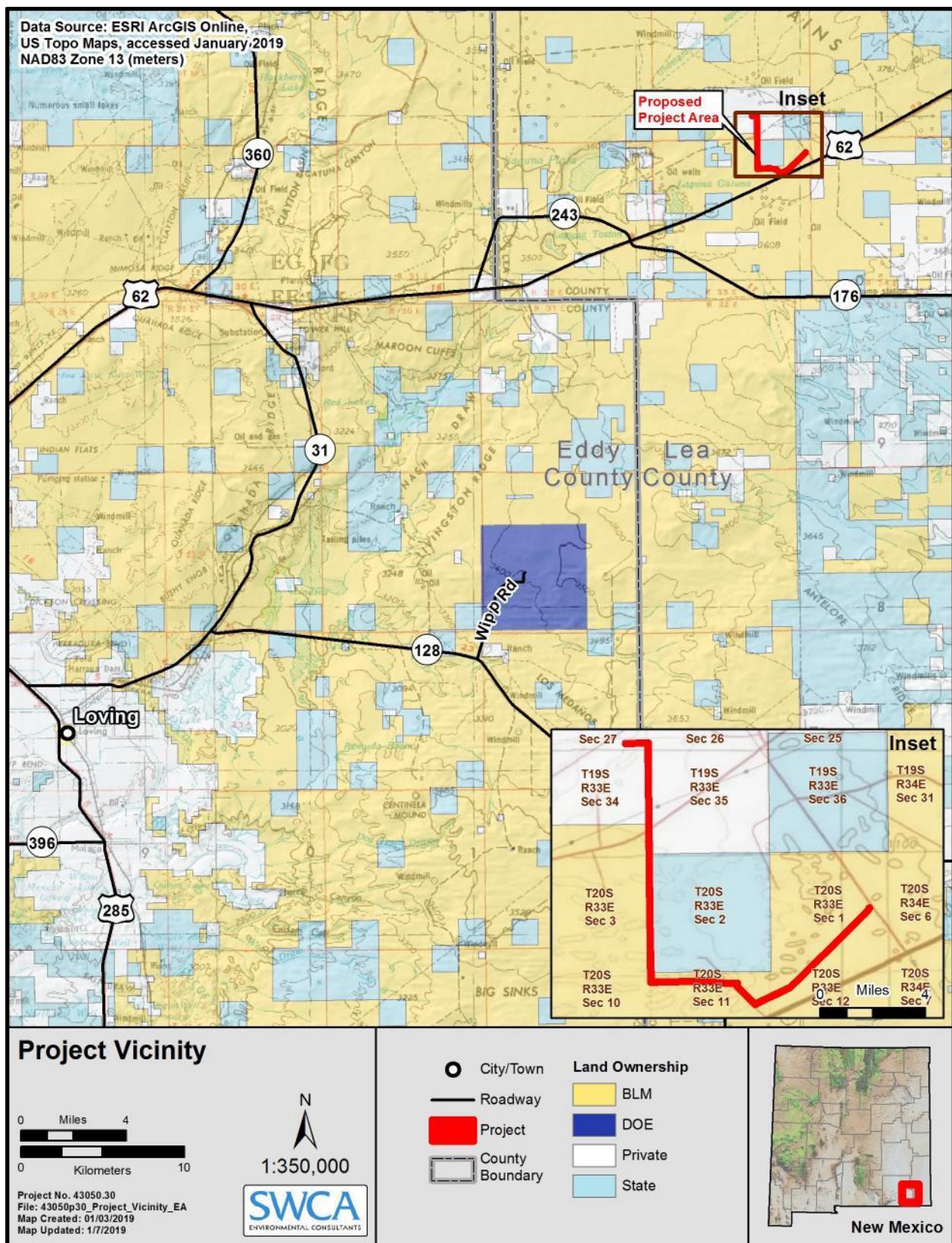


Figure 1.1. Project vicinity map.

A general biological survey of the proposed project area was conducted by SWCA Environmental Consultants (SWCA) on December 12 and 13, 2018. The results of the biological survey are provided in Chapter 3 below. The purpose of the biological survey was to evaluate the potential for special-status species to occur and to identify habitat communities for special-status species regulated by the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act of 1973 (ESA) and migratory bird nests protected by the Migratory Bird Treaty Act of 1918 (MBTA).

Approximately 3.3 miles (17,578 feet) of the project fall within the Permian Basin Programmatic Agreement (PBPA) area for cultural resources; therefore, no cultural surveys are required for that portion of the proposed project. The remainder of the proposed project, approximately 1.1 miles (5,938 feet), was surveyed for cultural resources on behalf of 3 Bear. SWCA conducted a Class III cultural resources inventory survey (New Mexico Cultural Resource Information System Activity No. 141597) on December 17, 2018. The survey was designed to meet, but not be limited to, the requirements detailed in *BLM Manual Supplement H-8100-1 New Mexico, Oklahoma and Texas: Procedures for Performing Cultural Resource Fieldwork on Public Lands in the Area of New Mexico BLM Responsibilities* (BLM 2002). The authority for these standards comes in part from Section 106 of the National Historic Preservation Act of 1966 (NHPA), the Antiquities Act of 1906, and the Historic Sites Act of 1935, along with all additional federal and state laws for preserving and protecting cultural resources. Results of this survey are on file with the BLM CFO and the State Land Office (SLO) (Brucker and Blair 2018).

This environmental assessment (EA) complies with the requirements of the National Environmental Policy Act of 1969 (NEPA) and federal regulations found in 40 Code of Federal Regulations (CFR) Chapter V. This EA analyzes the site-specific impacts associated with the Proposed Action and its alternative, identifies mitigation measures to potentially reduce or eliminate those impacts, and provides agency decision makers with detailed information with which to approve or deny the Proposed Action or an alternative. This EA analysis assumes the CFO's standard conditions of approval (COAs) would apply (BLM 1997:Appendix 2).

1.2 Purpose and Need for Action

The BLM's purpose is to respond to 3 Bear's request for legal use of, and access across, public lands managed by the BLM. The BLM's mandate for multiple uses of public lands includes development of energy resources in a manner that conserves the multitude of other resources found on public lands. The need for the Proposed Action is established by the BLM's responsibility under the Mineral Leasing Act of 1920 (MLA), as amended (30 United States Code [USC] 181 et seq.). The MLA (Sec. 28 (e)) further gives federal agencies authority to allow temporary uses of federal lands for construction, operation, and maintenance of pipelines. The BLM implementing regulations for this portion of the MLA are found at 43 CFR 2800/2880 and 36 CFR 251. The MLA authorizes the BLM to lease public lands for the development of mineral deposits (including oil, gas, and other hydrocarbons) and permit the development of those leases.

1.3 Decision to Be Made

The BLM will decide whether to issue the subject ROW grant and, if so, under what terms and conditions.

1.4 Conformance with Applicable Land Use Plan(s)

The Proposed Action is in conformance with the 1988 BLM Carlsbad Resource Management Plan (RMP) (BLM 1988), as amended by the 1997 Carlsbad Approved Resource Management Plan Amendment (RMPA) (BLM 1997) and the 2008 Special Status Species Approved RMPA (BLM 2008a). The 1988 RMP, as amended, provides for the integrated multiple use and sustained yield of resources for the planning area. After review, the BLM has determined that the Proposed Action conforms to the land use plan terms and conditions as required by 43 CFR 1610.5.

Name of Plan: 1988 Carlsbad Resource Management Plan

Date Approved: September 1988

Decision: “BLM will encourage and facilitate the development by private industry of public land mineral resources so that national and local needs are met, and environmentally sound exploration, extraction, and reclamation practices are used” (BLM 1988:13).

Name of Plan: 1997 Carlsbad Approved Resource Management Plan Amendment

Date Approved: October 1997

Decision: “Approximately 3,907,700 acres (95 percent of the oil and gas mineral estate) will be open to leasing and development under the BLM’s standard terms and conditions, the Surface Use and Occupancy Requirements (Appendix 1), the Roswell District Conditions of Approval (Appendix 2), and the Practices for Oil and Gas Drilling and Operations in Cave and Karst Areas (Appendix 3)” (BLM 1997:4). The proposed pipeline is within the 95% of oil and gas mineral estate open to development and complies with the Surface Use and Occupancy Requirements. Therefore, the Proposed Action is in conformance with the RMP, as amended (BLM 1997:4).

Name of Plan: 2008 Special Status Species Approved RMPA

Date Approved: April 2008

Decision: “New projects of the type described above [utility corridors for major projects such as interstate electric transmission lines; pipelines; and communications lines for interstate use] that propose to cross the Planning Area would be evaluated based on the impacts to lesser prairie-chicken and sand dune lizard habitats and other resources to meet the overall objectives of this plan. These projects would not be located in ROW avoidance areas if other routes can meet the purposes of the project” (BLM 2008a:2-13). The proposed project is located within the LPC Isolated Population Area and Timing Restriction Zone, as identified in the 2008 RMPA. Impacts from the Proposed Action on the lesser prairie-chicken (*Tympanuchus pallidicinctus*; LPC) are discussed in Section 3.5.2. In addition, the Proposed Action is not located in a ROW avoidance area. Therefore, the Proposed Action is in conformance with the RMPA.

1.5 Relationship to Statutes, Regulations, or Other Plans

Various federal and state agencies regulate different aspects of oil and gas infrastructure development. Table 1.1 lists the environmental permits and approvals that could be required for the proposed project.

Table 1.1. Potential Permits, Approvals, and Clearances Needed for Construction, Operation, and Maintenance of the Proposed Project

Permit/Notification	Issuing Agency	Status
Federal Permit, Approval, or Clearance		
Application for Transportation and Utility Systems and Facilities on Federal Lands (ROW grant)	BLM	Subject of this EA.
Clearance under Section 7 of the ESA	USFWS	A general biological survey was conducted in December 2018. Findings are described in Chapter 3. No further consultation with the USFWS is required.
MBTA (16 USC 703–712)	BLM	The BLM has not identified any requirements for MBTA compliance other than the initial biological survey to document nests and activity. Two inactive passerine nests were observed during the 2018 biological survey.

Permit/Notification	Issuing Agency	Status
Clean Water Act (CWA) Section 402 General Construction (Stormwater) Permit	U.S. Environmental Protection Agency and New Mexico Environment Department (NMED)	Exempt based on the 1987 Water Quality Act and Section 323 of the Energy Policy Act of 2005.
CWA Section 404 Permitting Discharges of Dredge or Fill Material into Waters of the U.S. (including wetlands)	U.S. Army Corps of Engineers	Section 3.2 describes impacts to water resources. No potentially jurisdictional water features were identified during the biological survey. Therefore, Nationwide Permits (NWPs) or Individual Permits under Section 404 of the Clean Water Act are not required.
State Permit, Approval, or Clearance		
CWA Section 401 Water Quality Permit	NMED	Section 3.2 describes impacts to water resources. No potentially jurisdictional water features were identified during the biological survey. 3 Bear would adhere to Section 401 Water Quality Certifications requirements per the State of New Mexico's regional conditions of NWP 12.
Clean Air Act New Mexico Air Quality Control Act	NMED	Impacts to air quality are described in Section 3.1. No NMED new source permit is required. A Notice of Intent may be required.
Section 106 of the NHPA	State Historic Preservation Office	Any consultation with the State Historic Preservation Office would be managed by the BLM.
Tribal communications: consultation to determine if the proposed project would impact receptors of cultural importance	Native American tribes	Any consultation with Native American tribes would be managed by the BLM.

1.6 Scoping, Public Involvement, and Issues

Appropriate scoping helps identify issues, resources, and resource uses that could be impacted, reducing the chances of overlooking a potentially significant issue or reasonable alternative. Scoping takes place internally within the BLM via meetings with resource specialists. Resource issues identified for the proposed project are listed in Table 1.2. No formal public scoping has occurred for the proposed project.

Table 1.2. Resource Issues Identified for the Proposed Project

Resource/Issue	Issue for Detailed Analysis
Air Resources	How would the proposed project impact air quality, especially during construction of the proposed project?
Watersheds and Drainages	How would the proposed project affect surface water resources, including drainages and playas? How would the proposed project affect potential flood zones?
Soils	How would the surface disturbance associated with the proposed project affect soils?

Resource/Issue	Issue for Detailed Analysis
Vegetation and Invasive, Non-Native Species	How would the proposed project affect vegetation? How would the proposed project minimize the spread of invasive non-native species?
Wildlife and Special-Status Species	How would the proposed project and associated noise impacts affect habitat for wildlife and migratory birds? How would the proposed project and associated noise impacts affect special-status species, particularly LPC, with the potential to occur in the proposed project area?
Cultural Resources and Native American Religious Concerns	How would surface-disturbing activities affect cultural resources? Are any traditional cultural properties affected by the proposed project?
Potash Minerals	How would the proposed project affect potash reserves, given that the proposed project is located within the Secretary's Potash Area?
Paleontological Resources	How would the proposed project impact paleontological resources, such as fossils?
Livestock Grazing	How would the proposed project impact livestock grazing in the vicinity of the proposed project?
Special Designation Areas	The closest special designation area, the Laguna Plata Special Management Area, is located approximately 3.9 miles west of the proposed project. However, the proposed project overlaps the Salt Playas proposed Area of Critical Environmental Concern (ACEC). How would the proposed project impact the Salt Playas proposed ACEC?
Public Health and Safety	How would the proposed project construction and ongoing activities impact public health and safety?

Resource issues considered by the BLM for potential impacts from the proposed project and then dismissed from further analysis in this EA are listed in Table 1.3 with rationale for the dismissal.

Table 1.3. Resource Issues Considered but Not Analyzed in Detail for the Proposed Project

Resource/Issue	Rationale for Dismissal from Detailed Analysis
Karst Resources	The proposed project area is located within the low karst potential as mapped by the CFO. The nearest area of medium karst potential is approximately 10.6 miles southwest of the proposed project. No surface karst features, such as sinkholes or caves, were identified during the biological survey of the proposed project area. No impacts to karst resources are expected. The standard COAs (BLM 1997:Appendix 3) regarding any discovery of karst voids during construction would apply.
Recreation	Dispersed recreation could occur in the vicinity of the proposed project. There are no special designations for recreation within or near the proposed project area.
Visual Resources	The proposed project is within Visual Resource Management Class IV, which allows for major modifications to the landscape. Minimal impacts to the landscape would occur since all disturbance would be revegetated during reclamation.
Socioeconomic Conditions	The small number of jobs created and the temporary status of those jobs do not warrant detailed analysis in this EA.
Environmental Justice	No environmental justice population, as defined by Executive Order 12898 (U.S. Environmental Protection Agency 2015), would be affected by the proposed project.
Groundwater Resources	The proposed project would have minimal belowground disturbances; therefore, the proposed project is not expected to impact groundwater.

2 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

3 Bear has submitted an application for a ROW grant to construct, operate, and maintain a gathering system consisting of one 10-inch-nominal-diameter steel gas pipeline, one 4-inch-nominal-diameter HDPE steel oil pipeline, and one 10-inch-nominal-diameter HDPE water pipeline, all buried in one or two trenches as detailed below. The proposed pipeline would be a linear right-of-way approximately 4.4 miles (23,516 feet) long and 30 feet wide in total to service two well pads, Anaconda 11-14 Federal and Anaconda 11 Federal. Within the trench, the requested gas pipeline would extend 2.6 miles (15,472 feet) from the Anaconda 11-14 Federal well pad, while the requested oil and water pipelines would extend in the opposite direction from the Anaconda 11 well pad for 1.5 miles (9,819 feet). Between the two well pads, the three pipelines would be co-located in two trenches spanning 0.3 mile (1,775 feet).

3 Bear is also requesting a 20-foot-wide temporary workspace for the proposed pipeline, for a total disturbance width of 50 feet. The 30-foot-wide permanent easement allows for safe operation of the buried pipeline. The 20-foot-wide temporary workspace would allow for equipment to operate safely without impacting soil stockpiles or creating unnecessary congestion. 3 Bear would make every effort to minimize use of the ROW where possible (Figure 2.1).

As indicated in Table 2.1, the Proposed Action would disturb approximately 27.0 acres. All surface disturbance associated with the proposed project area not needed for active support or production and maintenance operations would be reclaimed following construction. Photographs of the proposed project area are provided in Appendix A.

Table 2.1. Surface Disturbance of the Proposed Project

Project Element	Land Ownership	Length (feet)	Acreage of Short-Term Disturbance
Anaconda Lateral Laterals			
3.6-mile proposed ROW (30 feet wide)	BLM	18,898	13.0
Temporary workspace corridor (20 feet wide)			8.7
0.9-mile proposed ROW (30 feet wide)	Private	4,618	3.2
Temporary workspace corridor (20 feet wide)			2.1
Total Acreage of Disturbance			27.0

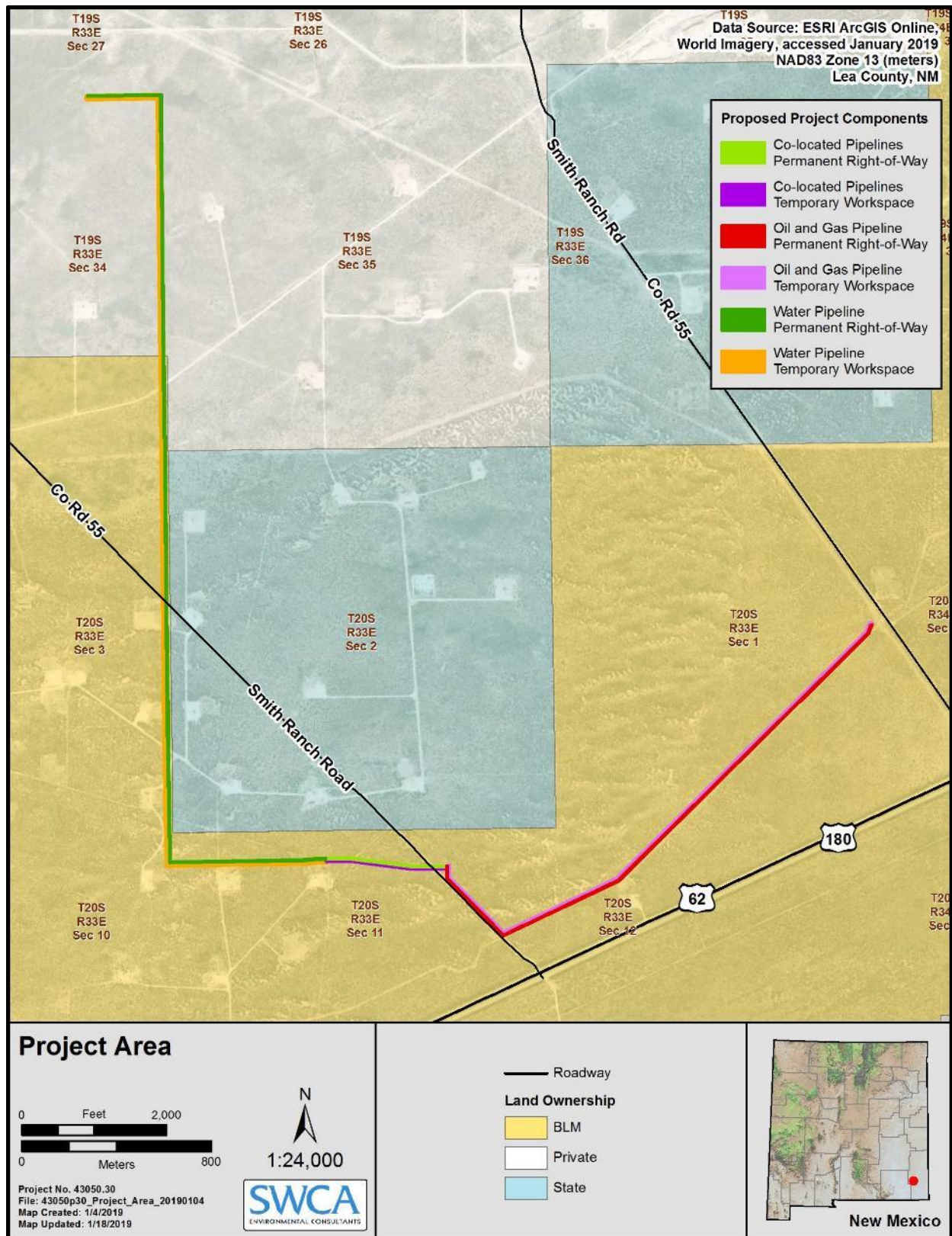


Figure 2.1. Proposed project area.

2.1.1 Construction of Pipeline

Standard pipeline construction techniques would be used along the proposed pipeline route, which typically involve the following: survey and staking, clearing and grading, trenching, pipe stringing, bending and welding, lowering in and backfilling, and cleanup and interim reclamation. To access the pipeline construction corridor, 3 Bear would use existing access roads. All access roads would be clearly identified on the pipeline aerial alignment sheets and would be posted at the access point. Prior to construction, if any loads are oversized or overweight, the appropriate permits would be obtained by the contractor.

Project Schedule

If the ROW grant is approved, construction of the proposed project is anticipated to occur between March 2019 and May 2019.

2.2 No Action

BLM NEPA Handbook H-1790-1 states that for EAs on externally generated applications, the No Action Alternative generally means the request for the proposed activity would be denied (BLM 2008b:52). This option is provided in 43 CFR 3162.3-1(h)(2). This alternative would deny the approval of the proposed application, and the current land and resource uses would continue to occur in the proposed project area. No mitigation measures would be required.

2.3 Alternatives Considered but Eliminated from Detailed Study

Alternatives to the Proposed Action are developed to explore different ways to accomplish the purpose and need while minimizing environmental impacts and resource conflicts and meeting other objectives of the Carlsbad RMP. Consistent with BLM NEPA Handbook H-1790-1 (BLM 2008b), the agency “need only analyze alternatives that would have a lesser effect than the Proposed Action” (BLM 2008b:80). Those alternatives with greater adverse resource impacts, or those that are not feasible because of existing physical constraints or infrastructure, are not brought forward for detailed analysis in this EA. Based on the considerations above and the resource issues avoided during the planning and siting process, only the Proposed Action is brought forward in this EA.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter is organized by relevant major resources or issues/concerns as presented in Section 1.6. On the basis of Council on Environmental Quality guidance and BLM NEPA Handbook H-1790-1, the following discussion is limited to those resources or resource uses that could be impacted to a degree that warrants detailed analysis (40 CFR 1502.15) (BLM 2008b:96) as determined by the BLM CFO interdisciplinary team. This analysis assumes the standard COAs BLM implements typically for pipelines and facilities would apply (BLM 1997:Appendix 2).

Projects requiring approval from the BLM, such as ROWs, can be denied when the BLM determines that adverse effects to resources (direct or indirect) cannot be mitigated to reach a Finding of No Significant Impact. Under the No Action Alternative, the proposed project would not be constructed, and there would be no new impacts to any elements of the human environment from approval of the proposed project. The No Action Alternative would result in the continuation of the current land and resource uses in the project area and is used as the baseline for comparison of environmental effects of the Proposed Action.

3.1 Air Resources

3.1.1 Affected Environment

Air quality and climate are components of air resources that may be affected by the Proposed Action. Therefore, the BLM must consider potential effects of BLM and BLM-authorized activities on air resources as part of the planning and decision-making process.

Technical information related to air resources and climate change associated with oil and gas development, as well as the methodology and assumptions used for analysis, is summarized in the *Air Resources Technical Report for Oil and Gas Development: New Mexico, Oklahoma, Texas and Kansas* (herein referred to as the Air Resources Technical Report) (BLM 2016). The Air Resources Technical Report lists the National Ambient Air Quality Standards (NAAQS) (BLM 2016:4–5) and describes the types of data used for description of the existing conditions (BLM 2016:6) and how the pollutants are related to the activities involved in oil and gas development (BLM 2016:7–14). A qualitative overview of air quality and climate is provided in this section.

Air Quality

BLM and BLM-authorized actions are required to comply with the Clean Air Act (CAA) and consider the impacts of these actions to air quality on BLM-managed lands.

National Ambient Air Quality Standards

Criteria Pollutants

Under the CAA, the U.S. Environmental Protection Agency (EPA) has the authority to regulate emissions from both stationary and mobile sources. The CAA requires the EPA to establish NAAQS for pollutants considered harmful to public health and the environment. In accordance with the requirement, the EPA has created national standards for seven common air pollutants, also known as criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), ozone (O₃), lead (Pb), particulate matter equal to or less than 10 microns in diameter (PM₁₀), and particulate matter equal to or less than 2.5 microns in diameter (PM_{2.5}).

The NAAQS include primary standards that provide for the protection of human health and secondary standards that provide for the protection of public welfare (e.g., visibility, the health of vegetation and animals). The NAAQS are defined in terms of threshold ambient concentrations measured as an average for specified periods of time. Pollutants with acute health effects are assigned short-term standards, and those with chronic health effects are assigned long-term standards. The NAAQS undergo periodic revisions

to ensure that emerging science and technology result in the most up-to-date and protective standards achievable (see EPA [2016] for current standards).

Under the provisions of the CAA, states can elect to develop their own ambient air quality standards, and New Mexico has adopted its own standards (New Mexico Ambient Air Quality Standards [NMAAQS]) for CO, NO₂, total suspended particulates, SO₂, hydrogen sulfide (H₂S), and total reduced sulfur (see New Mexico Administrative Code 20.2.3 for current state standards).

Attainment

In accordance with the CAA, the EPA must review air quality conditions reported by states to determine whether states are meeting the national standards for air quality. Areas with ambient concentrations of criteria pollutants within the NAAQS are deemed to be “attainment” areas;¹ conversely, those that do not meet the standards are referred to as “nonattainment” areas.² Geographic areas previously designated as nonattainment and subsequently re-designated as attainment as a result of achieving the NAAQS (for a probationary period) are categorized as “maintenance” areas. Areas that cannot be classified on the basis of insufficient data are designated as “unclassifiable.” The designation “attainment/unclassifiable” may be assigned to areas that are lacking sufficient monitoring data but that meet the standard or will soon meet the standard.

The General Conformity Rule

The General Conformity Rule, established under Section 176(c)(4) of the CAA, ensures that federal actions comply with the NAAQS, achieving attainment of these standards. Activities or actions that conform to the rule should not, through additional air pollutant emissions, cause or contribute to new violations, increase the frequency or severity of existing violations, or delay timely attainment or interim emission reductions (BLM 2014a). Essentially, air conformity ensures that air pollution emissions associated with federal actions do not contribute to air quality degradation, which would prevent the achievement of state and federal air quality goals.

The General Conformity Rule requires federal agencies to identify, analyze, and quantify emission impacts of a federal action where the total direct and indirect emissions for criteria pollutants in a nonattainment or maintenance area exceed the NAAQS. If the location of the action is in an attainment area, the General Conformity Rule does not apply (BLM 2014a).

Hazardous Air Pollutants

Hazardous air pollutants (HAPs), also known as air toxins, are pollutants that are produced primarily by human-made sources. These pollutants are known or suspected to cause adverse human health effects, including cancer, as well as negative effects on ecosystems. Humans can come into contact with these toxins through several exposure pathways, including inhalation; ingestion of contaminated food, water, and soil; and dermal contact.

The Air Resources Technical Report discusses the relevance of HAPs to oil and gas development and infrastructure, as well as the particular HAPs that are regulated in relation to these activities (BLM 2016:14–15). The EPA conducts a periodic National Air Toxics Assessment (NATA) that quantifies HAP impacts by county in the United States. The purpose of the NATA is to identify areas in which HAP emissions result in high health risks and further emissions reduction strategies are necessary. A review of the results of the 2014 NATA shows that cancer, neurological, and respiratory risks in Chaves, Eddy, and Lea Counties are not elevated and match statewide and national levels (EPA 2018a).

¹ Note: An area may meet the established NAAQS for one or more criteria pollutants but have unacceptable levels for others. Therefore, an area could be in attainment for one criteria pollutant and simultaneously in nonattainment for another (BLM 2014b).

² The EPA has set time limits for nonattainment areas to conform to the NAAQS, and may further designate nonattainment areas as marginal, moderate, serious, severe, or extreme (BLM 2014b).

Existing Air Quality

EPA's Green Book webpage reports that Eddy, Lea, and Chaves Counties are in attainment for all NAAQS, as defined by the CAA (EPA 2018b). In 2011, the CFO contracted with Applied EnviroSolutions to provide an emissions inventory for the CFO planning area, including Chaves, Eddy, and Lea Counties (Applied EnviroSolutions 2011). This information is more detailed than that available from the EPA and is specific to the CFO planning area. Monitored values for criteria pollutants (except CO)³ from the 2011 emissions inventory also show that the CFO planning area is in attainment with the NAAQS.

The Analysis of the Management Situation (AMS) for the CFO (BLM 2014b) discusses the sources of and the human health and safety concerns associated with criteria pollutants. The air quality analysis documented in the AMS shows that the criteria pollutant of most concern in the planning area is O₃. One county in the planning area, Eddy County, exceeded the 8-hour O₃ standard once in 2002 and once in 2006; however, it did not violate the 3-year rolling average.⁴ No other violations of air quality standards have occurred within the planning area. At present, O₃ levels are close to the regulatory limit (BLM 2014b). Other criteria pollutants of concern include nitrogen oxide(s) (NO_x) (including NO₂), SO₂, and particulate matter (PM₁₀ and PM_{2.5}). CO and Pb emissions are not considered major criteria pollutants in the CFO planning area (BLM 2014b).

Climate

Existing Climate

The planning area is located in a semiarid climate regime typified by dry, windy conditions, limited rainfall, hot summers, and mild winters. Summertime maximum temperatures are generally around 90 degrees Fahrenheit (°F), with occasional temperatures over 110°F (Western Regional Climate Center 2019). Winter minimum temperatures are generally between 20°F and 40°F, with extremes remaining above 0°F. Precipitation is mainly in the form of summer thunderstorms associated with the Southwest monsoon, though occasional Pacific storms drop south into New Mexico during the winter. Table 3.1 presents climate averages for Carlsbad using the most current climate data available (1981–2010) from the National Oceanic and Atmospheric Administration.

Table 3.1. Climate Averages for Carlsbad, 1981–2010

Climate Condition	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°F)	42.6	47.2	54.0	62.4	71.5	79.3	81.2	79.9	73.2	62.9	51.5	42.8
Maximum temperature (°F)	57.5	62.7	70.2	78.5	86.9	94.4	94.6	93.1	87.0	78.1	67.1	57.5
Minimum temperature (°F)	27.6	31.7	37.9	46.2	56.0	64.3	67.7	66.6	59.4	47.7	35.8	28.0
Precipitation (inches)	0.47	0.54	0.51	0.64	1.17	1.53	2.01	1.83	2.11	1.16	0.81	0.63

Source: National Oceanic and Atmospheric Administration 2011.

Global Climate Change

Climate change is defined as a non-random change in climate that is measured over a period of decades or longer (National Weather Service 2009). Changes may result from natural or human causes. The most useful indicator of climate change is greenhouse gas (GHG) emissions, which include long-lived emissions such as CO, carbon dioxide (CO₂), nitrous oxide (N₂O), and methane (CH₄), as well as water vapor and other trace gases (BLM 2014b). The 2013 Intergovernmental Panel on Climate Change (IPCC) fifth assessment report states that the atmospheric concentrations of well-mixed, long-lived GHGs have increased to levels unprecedented in at least the past 800,000 years. Further, human influence has been

³ There are no monitors for CO in the CFO planning area because CO levels are currently not an issue.

⁴ When assessing annual emissions for criteria pollutants, a 3-year rolling average accounts much of the year-to-year fluctuations in order to assess yearly trends.

detected in warming of the atmosphere and the ocean, changes in the global water cycle, reductions in snow and ice, global mean sea level rise, and changes in some climate extremes. It is extremely likely (95%–100% probability) that human influence has been the dominant cause of the observed warming since the mid-twentieth century (IPCC 2013).⁵

BLM-authorized activities that produce GHGs include oil and gas production, construction activities, vehicle use, and prescribed fire. These activities generate both CO₂ and CH₄, contributing largely through carbon emissions. The primary source of GHG emissions on BLM-managed land in the planning area is oil and gas production. Some BLM-authorized activities may assist in isolating carbon emissions. For example, vegetation maintenance may help build organic carbon in soils and absorb CO₂ (i.e., a carbon sink) from the atmosphere (BLM 2014b).

3.1.2 Impacts from the Proposed Action

Direct and Indirect Impacts

Air Quality

In 2014, the BLM released an Instruction Memorandum (IM) providing national guidance for the BLM on quantifying air emissions and on the use of air emissions estimating tools (BLM 2014c). The IM stipulates that it may be a useful step, under some circumstances, to estimate air emissions from resource management activities for analysis. However, the IM does not require air emissions to be quantified when preparing NEPA documents for a project in an attainment area, where the emissions would not be estimated to exceed the NAAQS (BLM 2014c).

Criteria for assessing air quality impacts are based on existing regulatory requirements across all applicable jurisdictions. Eddy, Chavez, and Lea Counties satisfy all NAAQS and NMAAQs for monitored pollutants and are classified as attainment areas for those pollutants. These counties are unclassified with regard to those pollutants that are not monitored in those counties (BLM 2014c).⁶

In 2011, The U.S. Department of Agriculture (USDA), U.S. Department of the Interior, and EPA signed a Memorandum of Understanding (MOU) regarding air quality analyses and mitigation for federal oil and gas decisions made through the NEPA process (USDA et al. 2011). The MOU focuses on analyzing and addressing air quality impacts (direct, indirect, and cumulative) associated with federal actions related to on-shore oil and gas planning, leasing, or field development (including exploration, development, and production). The MOU directs air quality modeling to be conducted if specific criteria are met, such as whether the action will result in a Substantial Increase in Emissions (i.e., emissions resulting from the action may cause or contribute to exceedances of the NAAQS) (see Section V.E.3 of the MOU). The Proposed Action is not anticipated to cause a Substantial Increase in Emissions, as defined by the MOU. See the cumulative impact analysis for more information about the contribution of emissions (Section 3.12.1).

Generally, potential impacts to air resources resulting from the Proposed Action include construction emissions (those emissions that are expected to be temporary) and operations-related emissions (those emissions that are expected to occur annually during operation of the Proposed Action). Typical construction-related emissions likely to be produced by the Proposed Action include GHGs, PM₁₀, NO_x, and CO. These emissions are anticipated to result from exhaust from construction vehicles, material movement, and equipment; exhaust from construction worker commuting; fugitive dust from general construction activities and earthmoving; and pipeline sandblasting and coating. Construction emissions would be short term, lasting only the duration of construction, and would not result in a substantial increase in emissions. These temporary impacts would be negligible and would not cause or contribute to exceedances of the NAAQS.

⁵ The IPCC is currently in its sixth assessment cycle, for which the synthesis report should be finalized in 2022.

⁶ As the Proposed Action is not located in a nonattainment or management area, the General Conformity Rule does not apply, and a conformity determination, through the identification, analysis, and quantification of emission impacts of the Proposed Action, is not required.

Operations-related emissions likely to be produced as a result of the Proposed Action include GHGs, CO, volatile organic compounds, and NO_x. These emissions are attributable to aboveground fugitive emissions from operations equipment and to emissions from inspection and maintenance of the equipment (including exhaust from inspection vehicles and aerial inspections, along with fugitive dust from vehicular use of unpaved roads). Fugitive dust emissions may also result from annual maintenance or repair of access roads. Periodic inspection and maintenance activities would occur during the operations phase of the proposed project. Emissions from operations and maintenance associated with the Proposed Action would be minimal and would not result in significant impacts to air resources.

Mitigation Measures

Measures to minimize or eliminate impacts to air quality are described in COAs (BLM 1997:Appendix 2). No further mitigation measures have been recommended.

3.2 Watersheds and Drainages

3.2.1 Affected Environment

Surface Hydrology

The surface water supplies in Lea County are transitory and limited to quantities of runoff impounded in short drainageways, shallow lakes, and small depressions, including various playas and lagunas (New Mexico Office of the State Engineer [NMOSE] 1999). The proposed project crosses one watershed: the Laguna Plata watershed as defined by the 10-digit Hydrologic Unit Code (HUC) (Table 3.2). This watershed is contained within the Lower Pecos Basin, although there are no connecting drainages to the Pecos River in the proposed project area, and the Pecos River is approximately 36 miles west of the proposed project area (NMOSE 2016). There are no New Mexico Outstanding National Resource Waters within these watersheds.

Table 3.2. Watersheds Crossed by the Proposed Project

Watershed Name	HUC-10/ID	Portion of Proposed Project Area within the Watershed (acres)	Total Watershed Size (acres)
Laguna Plata	1306001116	27.0	156,952

A biological survey of the proposed project area was conducted in December 2018 to determine the presence of potential waters of the U.S., as defined by the U.S. Army Corps of Engineers (USACE), including streams, wetlands, and other special aquatic sites. Defining elements of potential waters of the U.S. include ordinary high-water marks (OHWMs), defined bed and banks, or the three mandatory wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. The presence of playas and vegetated depressions was also investigated during the biological survey according to the BLM CFO's guidance.

Based on a review of the U.S. Geological Survey's (USGS's) National Hydrography Dataset (NHD) and the USFWS's National Wetlands Inventory, there were no potentially jurisdictional surface water features (USGS 2013; USFWS 2019a) within the proposed project area. No other jurisdictional surface water features were found during the biological survey of the proposed project area.

The presence or absence of wetlands was determined in the field using routine on-site delineation methods according to the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a). Determination of wetland habitat type was based on the classification system developed by Cowardin et al. (1979). Other sources used to identify the presence/absence of wetlands include the *Pocket Guide to Hydric Soil Field Indicators, Version 7.0* (Wetland Training Institute, Inc. 2013). The presence or absence of lotic systems (e.g., creeks, rivers, arroyos, human-made ditches; collectively streams) was identified in the field

using the methods outlined in the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (USACE 2008b).

According to the Federal Emergency Management Agency (FEMA) Flood Map Service Center data, the proposed project occurs outside Zone A mapped floodplains (FEMA 2008). Zone A floodplains represent 100-year floodplains that have a 1% chance of being inundated in a given year.

3.2.2 Impacts from the Proposed Action

Direct and Indirect Impacts

No potential waters of the U.S. were identified during the biological survey of the proposed project area. Therefore, no direct impacts to waters of the U.S. would occur from the proposed project. Furthermore, no playas or vegetated depressions, as defined by the BLM CFO, were identified within the survey area during the biological survey; therefore, no direct impacts to these features would occur from the proposed project.

The potential to impact water resources primarily lies with the indirect impacts that could occur due to stormwater runoff from construction activities into downstream aquatic resources. Although indirect impacts from stormwater movement of contaminants or sediment due to ground disturbance could be a possibility, the mitigation measures described below, the standard COAs (BLM 1997:Appendix 2), and post-construction reclamation would likely limit movement of contaminants or sediment and limit indirect impacts.

Hydrostatic test water would be disposed at a permitted upland disposal area after testing of the pipelines occurs. Mitigation measures would be used to reduce the potential for erosion from the discharged water. It is unlikely that impacts to water resources would occur from hydrostatic testing.

Similar to potential impacts to surface water, impacts to groundwater could occur if spills or leaks occurred during operation of the pipeline. Mitigation measures that minimize potential risk to groundwater include implementation of a spill response plan.

Mitigation Measures

Measures to minimize or eliminate impacts to water resources are described below and in the standard COAs (BLM 1997:Appendix 2) for buried and surface-installed pipelines. No special mitigation has been identified by the BLM.

- Any water erosion that may occur due to the construction of the pipeline and associated infrastructure would be quickly corrected, and proper measures would be taken to prevent future erosion.
- Stockpiling of topsoil would be required. The topsoil would be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and would not be used for erosion control.

3.3 Soils

3.3.1 Affected Environment

According to the Natural Resources Conservation Service (NRCS) (2019a), seven soil types are mapped within the 27.0-acre proposed project area (Table 3.3).

Table 3.3. Soils in the Proposed Project Area

Soil Type Name	Soil Type Symbol	Acres in Full Project Footprint	Percent of Project Area
Berino-Cacique fine sandy loams association	BF	0.6	2.4
Kermite soils and dune land, 0 to 12 percent slopes	KM	11.4	41.9

Soil Type Name	Soil Type Symbol	Acres in Full Project Footprint	Percent of Project Area
Midessa and wink fine sandy loams	MN	7.0	25.8
Pyote and maljamar fine sands	PU	3.2	12.1
Pyote soils and dune land	PY	1.2	4.4
Reeves-Cottonwood association	RT	0.3	1.3
Tonuco loamy fine sand	TF	3.3	12.2
Total		27.0	100.0

Source: NRCS (2019a).

All of these soil units are considered negligibly drained to low-drained soils, with the exception of soil type TF which is very high-drained. None of these soil units are considered hydric. Two of the soil units, MN and RT, are classified as prime farmland soil of statewide importance (NRCS 2019a).

Biological soil crusts are important components of the loamy and sandy soils of southeastern New Mexico. These crusts bind soil particles, thereby stabilizing surfaces and reducing erosion. Biological soil crusts in sandy soils are most commonly dominated by early succession cyanobacteria, which are adapted to disturbed conditions or very erodible soils. Loamy soils contain cyanobacteria but may also be colonized by algae, fungi, mosses, and squamulose, crustose, and gelatinous lichens. All soil crust organisms enhance soil stability, capture nutrient-rich dust, impact nutrient cycling, contribute organic matter, and influence soil moisture dynamics. In addition, cyanobacteria and cyano-lichens fix atmospheric nitrogen, potentially making this nutrient more available for vascular plants. All of these functions are utilized by and important for sustaining grasses, forbs, and other vascular plants in the project area. These crusts have the potential to exist in most areas where soils are exposed (i.e., not covered by rocks or vegetation). During the 2018 biological survey, no biological soil crusts were observed; however, an in-depth soil inventory of the entire proposed project area was not conducted.

3.3.2 *Impacts from the Proposed Action*

Direct and Indirect Impacts

As described in Chapter 2 (see Table 2.1), construction activities associated with the proposed project would impact 27.0 acres of soils. During construction, direct impacts to soils would mostly include soil compaction from heavy equipment, increased soil erosion from the removal of vegetation cover, and potential contamination from accidental spills or leaks. These direct impacts could result in the loss of soil structure and porosity. Once the proposed project has been constructed, the surface disturbance not needed for production of the proposed project would be stabilized and reclaimed. Stabilization of soils would be partly dependent upon reestablishing vegetation cover. With sufficient rainfall and proper seeding techniques, vegetation cover by faster-growing plants is expected within 2 years after construction. The growth of mature native plant communities could require decades to become fully reestablished (Monsen et al. 2004).

No biological soil crusts were observed during the 2018 biological survey; therefore, the proposed project would be unlikely to directly impact biological soil crusts.

Indirect impacts to soil resources could include a change in soil productivity due to mixing of topsoil with subsoil during trenching and grading. Another indirect impact could be the colonization of noxious weeds on disturbed soils.

Mitigation Measures

Measures to minimize impacts to soils are described below and in the standard COAs (BLM 1997: Appendix 2) for buried and surface-installed pipelines. No special mitigation has been identified by the BLM.

- Interim reclamation would be conducted on the disturbed area to mitigate impacts to soil resources.
- Topsoil would be stockpiled and used after construction to enhance reclamation of the disturbed pipeline ROW.

3.4 Vegetation and Invasive Non-Native Species

3.4.1 Affected Environment

The proposed project area is located within the High Plains: Shinnery Sands ecoregion as defined by the EPA Level III and Level IV ecoregions in Griffith et al. (2006). During the biological survey, biologists identified two general vegetation community types within the proposed project area: desert grassland and duneland (see Figures A.2–A.6 in Appendix A). For both community types, vegetation cover within and surrounding the proposed project area is approximately 15% to 50%.

The dominant species within the desert grassland community include Lehmann lovegrass (*Eragrostis lehmanniana*) and honey mesquite (*Prosopis glandulosa*).

The dominant species within the duneland community include sandbur (*Cenchrus* sp.), honey mesquite, and shinnery oak (*Quercus havardii*).

At the time of the biological survey, the vegetation communities within and/or surrounding the proposed project area had previous disturbance from existing oil and gas infrastructure and livestock grazing (see photographs in Appendix A). Plant species recorded during the biological survey are listed in Table 3.4.

Table 3.4. Plant Species Observed during the Biological Survey of the Proposed Project Area

Common Name	Scientific Name	Desert Grassland Community	Duneland Community
Wooton's threeawn	<i>Aristida pansa</i>		X
Fourwing saltbush	<i>Atriplex canescens</i>		X
Desertholly	<i>Atriplex hymenelytra</i>	X	
Black grama	<i>Bouteloua eriopoda</i>	X	
Blue grama	<i>Bouteloua gracilis</i>	X	
Sandbur	<i>Cenchrus</i> sp.		X*
Wavyleaf thistle	<i>Cirsium undulatum</i>	X	
Grassland croton	<i>Croton dioicus</i>	X	X
Low woollygrass	<i>Dasyochloa pulchella</i>	X	
Lehmann lovegrass	<i>Eragrostis lehmanniana</i>	X*	
Broom snakeweed	<i>Gutierrezia sarothrae</i>	X	X
Western wheatgrass	<i>Pascopyrum smithii</i>	X	
Tobosagrass	<i>Pleuraphis mutica</i>	X	
Honey mesquite	<i>Prosopis glandulosa</i>	X*	X*
Shinnery oak	<i>Quercus havardii</i>		X*
Threadleaf ragwort	<i>Senecio flaccidus</i>	X	
Globemallow	<i>Sphaeralcea</i> sp.	X	

Common Name	Scientific Name	Desert Grassland Community	Duneland Community
Alkali sacaton	<i>Sporobolus airoides</i>		X
Sand dropseed	<i>Sporobolus cryptandrus</i>		X
Whitethorn acacia	<i>Vachellia constricta</i>		X
Plains yucca	<i>Yucca campestris</i>		X

Note: Nomenclature follows the PLANTS Database (NRCS 2019b).

X indicates a species was present within respective vegetation community.

* Denotes dominant species within corresponding vegetation community.

Invasive, Non-Native Species

During the biological survey, no State of New Mexico-listed or USDA-listed noxious weeds were identified within the proposed project area (New Mexico Department of Agriculture 2016; USDA 2018). The BLM participates in an invasive species monitoring and treatment program in Lea County. Based on review of the BLM CFO's noxious weed treatment geographic information system (GIS) shapefile, there are no previously mapped noxious weed treatment areas crossed by the proposed project or nearby.

3.4.2 Impacts from the Proposed Action

Direct and Indirect Impacts

Impacts to plant communities and habitats from the construction of the proposed project would include 27.0 acres of short-term direct impact from vegetation removal. Short-term impacts would occur during site preparation and would continue until revegetation of the proposed project area is achieved. Faster-growing plants are estimated to establish approximately 2 years after construction, depending on timely rainfall. Short-term surface disturbance from construction of the proposed project would be reclaimed with a BLM-prescribed seed mixture following construction.

Impacts to vegetation are reduced by the following standard practices: using existing surface disturbance, minimizing vehicular use, placing parking and staging areas on caliche-surfaced areas, reclaiming the disturbed area immediately after construction is complete, and quickly establishing vegetation on the reclaimed areas.

Any surface disturbance can increase the possibility of establishment of new populations of invasive, non-native species. Noxious weed seed could be carried to and from the proposed project area by construction equipment and transport vehicles. Mitigation measures to control the spread of weeds would be negotiated with the CFO.

Mitigation Measures

Measures to minimize or eliminate impacts to vegetation and to control the spread of noxious weeds are described below and in the standard COAs (BLM 1997:Appendix 2) for buried and surface-installed pipelines. No special mitigation has been identified by the BLM.

- Interim reclamation would be conducted on the disturbed area to mitigate impacts and to enhance re-establishment of vegetation.
- Topsoil would be stockpiled to enhance reclamation, and the area would be reseeded using a seed mixture approved by the CFO.
- The operator would be held responsible if noxious weeds become established within the areas of operations. Weed control would be required on the disturbed land where noxious weeds exist and on adjacent land affected by the establishment of weeds due to this action. The operator would

consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

3.5 Wildlife and Special-Status Species

3.5.1 Affected Environment

The High Plains: Shinnery Sands ecoregion (Griffith et al. 2006) provides habitat for a variety of wildlife species. Within the desert grassland and duneland vegetation communities, SWCA biologists detected five bird species and seven mammal species during the 2018 biological survey of the proposed project area (Table 3.5). Two inactive passerine nests were recorded in the proposed project area during the 2018 biological survey (see Figures A.1 and A.7 in Appendix A).

Table 3.5. Wildlife Detected during the Biological Survey of the Proposed Project Area

Common Name	Scientific Name	Desert Grassland Community	Duneland Community
Avians			
Red-tailed hawk	<i>Buteo jamaicensis</i>	X	
Northern harrier	<i>Circus hudsonius</i>		X
American kestrel	<i>Falco sparverius</i>		X
Prairie falcon	<i>Falco mexicanus</i>		X
Eastern meadowlark	<i>Sturnella magna</i>		X
Mammals			
Domestic cow	<i>Bos taurus</i>	X	X
Kangaroo rat (mounds)	<i>Dipodomys</i> sp.	X	
Domestic horse	<i>Equus</i> sp.		X
Black-tailed jackrabbit	<i>Lepus californicus</i>	X	
Pocket gopher (mounds)	<i>Geomyidae</i> sp.	X	
Woodrat (midden)	<i>Neotoma</i> spp.		X
Desert cottontail	<i>Sylvilagus audubonii</i>	X	

X indicates a species was present within respective vegetation community.

Most bird species and their nests are protected by the MBTA, which implements various treaties and conventions between the United States and other countries for the protection of migratory birds. Bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are protected under the MBTA and the Bald and Golden Eagle Protection Act. Bald eagles are unlikely to occur in the proposed project area due to lack of trees and preferred prey. Golden eagles could forage in the proposed project area, especially outside the breeding season when they can perch on utility poles far from cliffs and other rugged terrain.

Special-Status Species

The special-status species evaluated in this EA consist of 1) all federally protected (i.e., endangered and threatened) species, 2) additional species listed by the USFWS as candidate and proposed and species under review (USFWS 2019b), 3) state-listed endangered and threatened species (Biota Information System of New Mexico [BISON-M] 2019; New Mexico Energy, Minerals and Natural Resources Department 2018), and 4) BLM sensitive species, some of which are also listed as candidates or are under review by the USFWS and/or are state-listed. The BLM manages certain sensitive species that are not federally listed as threatened or endangered in order to prevent or reduce the need to list them as threatened or

endangered in the future. The authority for this policy and guidance is established by the ESA, as amended; Title II of the Sikes Act, as amended; the Federal Land Policy and Management Act; and Department of the Interior Manual 235.1.1A.

Based on the results of the 2018 biological survey of the proposed project area, three special-status species have the potential to occur within the proposed project area (Table 3.6). All special-status species analyzed for the proposed project area are included in the full special-status species table (Table B.1, Appendix B). The proposed project area does not occur within any special-status species' critical habitat.

Table 3.6. Special-Status Species with the Potential to Occur in the Proposed Project Area

Common Name (Scientific Name)	Status	Range or Habitat Requirements	Potential for Occurrence in Proposed Project Area
Avians			
Lesser prairie-chicken (<i>Tympanuchus pallidicinctus</i>)	BLM Sensitive	This species occurs in southeastern New Mexico, primarily in shinnery oak (<i>Quercus havardii</i>) or sand sagebrush (<i>Artemisia filifolia</i>) grasslands. Also occurs in shinnery oak–bluestem habitats dominated by sand bluestem (<i>Andropogon hallii</i>), little bluestem (<i>Schizachyrium scoparium</i>), sand dropseed (<i>Sporobolus cryptandrus</i>), threeawn (<i>Aristida</i> spp.), and blue grama (<i>Bouteloua gracilis</i>).	May occur in the proposed project area due to the presence of marginally suitable habitat, including shinnery oak and blue grama plant species, that is preferred by this species. However, the project area lacks the extensive grass-prairie habitat preferred by this species. The proposed project area is within the LPC isolated population area and timing restriction zone (BLM 2008a). This species was not observed during the 2018 biological survey of the proposed project area.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	BLM Sensitive	The loggerhead shrike is a year-round resident in New Mexico and is found throughout the state, primarily in open country including grasslands, improved pastures, hayfields, shrub steppe, and desertscrub, as well as piñon-juniper woodland and woodland edges.	May occur in the proposed project area due to the presence of marginally suitable habitat, including grasslands. This species was not observed during the 2018 biological survey.
Reptiles			
Texas horned lizard (<i>Phrynosoma cornutum</i>)	BLM Sensitive	Inhabits arid and semiarid areas in the southwestern United States, characterized by open country with little vegetation. These areas often consist of grasses interspersed with cacti, yucca (<i>Yucca</i> sp.), mesquite (<i>Prosopis</i> sp.), and other assorted woody shrubs and trees. In New Mexico, the species is associated with <i>Yucca-Prosopis-Ephedra</i> and <i>Larrea-Acacia-Fouquieria</i> habitat associations, often in playas or on bajadas and mountain foothills.	May occur in the proposed project area due to presence of suitable habitat, including mesquite and other shrubs. This species was not observed during the 2018 biological survey of the proposed project area.

Except where otherwise noted, range or habitat information for wildlife species is taken from BISON-M (2019), USFWS Information for Planning and Consultation System (USFWS 2019b), NatureServe (2019), Cartron (2010), and USFWS (2019Wesa).

3.5.2 Impacts from the Proposed Action

Direct and Indirect Impacts

General Wildlife

Impacts to wildlife would result from actions that alter wildlife habitats, including changes to habitat and disturbance. Altering wildlife habitat in ways that would be considered adverse may occur directly (through habitat loss from surface disturbance) or indirectly (through the reduction in habitat quality caused by increased noise levels and increased human activity). The proposed project would result in 27.0 acres of new surface disturbance.

Short-term impacts to wildlife and special-status species would include the removal or crushing of existing vegetation, risk of direct mortality of species during construction, loss or degradation of native habitat, and displacement of wildlife species from habitat due to development. Additional potential short-term indirect impacts could include disruption or displacement of species from nesting/birthing and foraging areas, changes in activity patterns due to construction, increased human activity, and noise disturbance. Noise disturbance could impact wildlife by interfering with animals' abilities to detect important sounds or by posing an artificial threat to animals (Clinton and Barber 2013). Construction equipment associated with the proposed project would contribute the highest noise levels. Currently, the noise profile of the surrounding area is influenced by existing oil and gas infrastructure in the immediate vicinity, which would not change as a result of the proposed project.

Long-term, direct impacts to wildlife would result from the proposed project incrementally contributing to overall habitat fragmentation and isolation of connected habitats, including reduced habitat patch size, reduced distance between areas of disturbance, and the potential displacement of wildlife. The proposed project would not contribute to overall habitat fragmentation, as the majority of the proposed project is located immediately adjacent to or within existing oil and gas-related disturbance areas (see photographs in Appendix A).

After construction, all surface disturbance associated with the proposed project area not needed for active support or production and maintenance operations would be reclaimed. Reclamation of disturbed areas is expected to return the affected area to herbaceous production within 2 years after construction, depending on drought conditions. However, the establishment of mature native plant communities may require decades (Monsen et al. 2004). As a result, the change in plant species composition could modify cover and foraging opportunities for wildlife, thereby having a long-term impact on wildlife and special-status species.

Special-Status Species

The special-status species with potential BLM CFO COAs and the potential to occur in the proposed project area were evaluated for possible impacts from the proposed project and are described further below.

Lesser Prairie-Chicken (*Tympanuchus pallidicinctus*)

The proposed project area is located within the LPC isolated population area and timing restriction zone managed by the BLM CFO (BLM 2008a) (see Figure A.1 in Appendix A). Neither LPCs nor signs of this species (e.g., feathers, scat, tracks) were observed in the proposed project area during the biological survey. There is marginally suitable habitat for this species within the proposed project area due to the presence of shinnery oak, sand sagebrush (*Artemisia filifolia*), and blue grama (*Bouteloua gracilis*). However, the proposed project area does not contain the extensive mixed-grass prairie habitat preferred by this species, and the proposed project area has been highly disturbed from livestock grazing, utility line corridors, and oil and gas development activities (i.e., access roads, pipelines, and well pads). Therefore, the LPC is unlikely to occur in the proposed project area and the LPC survey requirements would not likely be required for the proposed project.

The existing disturbance has resulted in fragmented habitat for LPCs within the proposed project area. Per the BLM Guidance Letter (BLM 2017), construction activities for the proposed project would not be allowed within the LPC timing restriction zone during the period from March 1 through June 15 annually.

The CFO has established a noise limit stipulation in the LPC area that limits noise from oil and gas operations to no more than 75 decibels measured at 30 feet from the noise source. Therefore, any operational noise during construction of the proposed project would comply with this stipulation. Additionally, based on the amount of surrounding existing disturbance, the proposed project is not likely to contribute to a trend toward federal listing or cause a loss of viability for the LPC.

Loggerhead Shrike (Lanius ludovicianus)

The loggerhead shrike is designated as a BLM-sensitive species and is also protected under the MBTA. This species was not observed during the biological survey of the proposed project area. If vegetation removal is scheduled to occur during the migratory bird breeding season (March 1 through August 31), a nest survey is recommended to be conducted up to 2 weeks prior to vegetation removal and avoidance buffers around any occupied nests would be established (distances to be specified by the BLM CFO). Adult birds would likely not be directly harmed by the proposed project because of their mobility and ability to avoid areas of human activity. The proposed project could impact individuals but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

Texas Horned Lizard (Phrynosoma cornutum)

The Texas horned lizard is a BLM-sensitive species. No Texas horned lizards were observed during the biological survey; however, the proposed project area occurs within their habitat range (BLM 2008a). However, only low-quality sand dunes of unsuitable habitat were observed during the survey, photographs of which are included in Appendix A. If Texas horned lizards are present during construction, they could avoid disturbance by moving to adjacent habitat. In addition, following New Mexico Department of Game and Fish (NMDGF) (2003) trenching guidelines would prevent accidental Texas horned lizard mortality resulting from entrapment during construction activities of the buried pipeline. The proposed project could impact individuals but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species.

Mitigation Measure and Residual Impacts

Measures to minimize or eliminate impacts to wildlife are described in the standard COAs (BLM 1997:Appendix 2) for buried and surface-installed pipelines. Special mitigation includes the following:

- 3 Bear would instruct personnel working on the construction of the proposed project to avoid harassing all animals.
- For portions of the project being constructed during the bird nesting season (March 1 through August 31), 3 Bear could conduct pre-construction nest surveys up to 2 weeks prior to vegetation removal and avoidance buffers around any occupied nest could be established (distances to be specified by the BLM) to ensure compliance with the MBTA.
- Similarly, unoccupied raptor nests would be removed by 3 Bear, in consultation with a biologist, outside the breeding season.
- In consideration of conservation measures and other protective criteria outlined in the 2008 RMPA for projects within LPC management areas. 3 Bear has coordinated with the BLM to ensure minimum surface disturbance in LPC habitat by
 1. Confining the proposed facilities to existing alignments to the extent feasible;
 2. Minimizing width of construction disturbance; and
 3. Placing proposed alignment outside ROW avoidance areas and other sensitive areas.
- Additional mitigation measures for activities in LPC management areas outlined in the 2008 RMPA include the following:
 1. Timing and noise restrictions would be applied to prevent disruption of mating and nesting activities. All construction activities would be prohibited from 3:00 a.m. to 9:00 a.m. during March 1 to June 15 in the project area.

2. Exceptions to these timing requirements would be considered in emergency situations such as mechanical failures. Potential drill rig loss, drill rig scheduling, or the potential loss of a lease are not emergency situations. Exceptions would not be granted after March 15 or during the March 1 to June 15 period if the BLM determines, on the basis of biological data or other relevant facts or circumstances, that the granting of an exception would disrupt LPC booming activity during the breeding season. Requests for exceptions on a non-emergency basis may also be considered for the period of March 1 to June 15, but these exceptions would not be granted if the BLM determines that there are LPC habitat, LPC sightings, historical leks, or active leks within 1.5 miles of the proposed location or any combination of the above-mentioned criteria.
3. If new LPC leks are discovered in the future within the LPC management area, a 1.5-mile radius around the lek would be considered occupied habitat and the prescriptions of this alternative would apply to proposed actions in and around that habitat.
 - The CFO has established a noise limit stipulation in the LPC area that limits noise from oil and gas operations to no more than 75 decibels measured at 30 feet from the noise source; therefore, any operational noise from the proposed compressor station would comply with this stipulation.
 - 3 Bear would follow best management practices for pipeline burial (NMDGF 2003) in order to prevent accidental Texas horned lizard mortality caused by entrapment.
 - 3 Bear would follow BLM Open Trench Wildlife Removal Workshop materials (BLM 2013) to avoid mortality caused by entrapment.

3.6 Cultural Resources

3.6.1 Affected Environment

The project falls within the Southeastern New Mexico Archaeological Region. This region contains the following cultural/temporal periods: Paleoindian (ca. 11,500–7000 B.C.), Archaic (ca. 6000 B.C.–A.D. 500), Ceramic (ca. A.D. 500–1400), Post-Formative Native American (ca. A.D. 1400–present), and Historic Euro-American (ca. A.D. 1865–present). Sites representing any or all of these periods are known to occur within the region. A more complete discussion of the periods and site types is provided in the *Permian Basin Research Design 2016-2026 Volume I: Native American Archaeology and Cultural Resources* (Railey 2016).

Native American Religious Concerns

The BLM conducts Native American consultation regarding traditional cultural properties (TCPs) and sacred sites during land use planning and its associated environmental impact review. In addition, during the oil and gas lease sale process, Native American consultation is conducted to identify TCPs and sacred sites whose management, preservation, or use would be incompatible with oil and gas or other land use authorizations. With regard to TCPs, the BLM has very little knowledge of tribal sacred or traditional use sites, and these sites may not be apparent to archaeologists performing surveys in advance of drilling.

3.6.2 Impacts from the Proposed Action

Direct and Indirect Impacts

PERMIAN BASIN PA INSERT FOR DIRECT AND INDIRECT IMPACTS:

The project falls outside of the area covered by the PBPA. The PBPA is an optional method of compliance with Section 106 of the NHPA for energy-related projects in a 28-quadrangle area of the BLM CFO planning area. The PBPA is a form of off-site mitigation that allows industry to design projects to avoid known National Register of Historic Places eligible cultural resources and to contribute to a mitigation fund in lieu of paying for additional archaeological inventory in this area that has received adequate previous survey. Funds received from the PBPA will be used to conduct archaeological research and outreach in southeastern New Mexico. Research will include archaeological excavation of significant sites, predictive

modeling, and targeted research activities, as well as professional and public presentations on the results of the investigations.

The proponent chose to participate in the PBPA by planning to avoid all known National Register of Historic Places eligible and potentially eligible cultural resources. The proponent has contributed funds commensurate to the undertaking into an account for off-site mitigation. Participation in the PBPA serves as mitigation for the effects of this project on cultural resources. If any skeletal remains that might be human or funerary objects are discovered by any activities, the project proponent would cease activities in the area of discovery and notify the BLM within 24 hours as required by the PBPA.

NON PERMIAN INSERT FOR DIRECT AND INDIRECT IMPACTS:

Cultural resources on public lands, including archaeological sites and historic properties, are protected by federal law and regulations (Section 106 of the NHPA and NEPA). Class III cultural surveys will be conducted of the area of effect for realty or oil and gas projects proposed on these lands prior to the approval of any ground-disturbing activities to identify any resources eligible for listing on the National Register of Historic Places. Cultural resource inventories minimize impacts to cultural sites and artifacts by avoiding these resources prior to construction of the proposed project. If unanticipated or previously unknown cultural resources are discovered at any time during construction, all construction activities would halt and the BLM Authorized Officer would be immediately notified. Work would not resume until a Notice to Proceed is issued by the BLM.

A Class III cultural resource inventory (SWCA Cultural Resources Report No. 141597 (Brucker and Blair 2018]) was conducted and no historic properties were identified within the area of potential effects.

Mitigation Measures

Measures to minimize impacts to cultural resources are described in the standard COAs (BLM 1997:Appendix 2) for buried and surface-installed pipelines. No special mitigation or requirements have been identified by the BLM.

3.7 Potash Resources

3.7.1 Affected Environment

Potash resources in southeastern New Mexico are located in an area governed by the rules of the Secretary of the Interior's 2012 Order dated December 4, 2012. This area is commonly called the Secretary's Potash Area (SOPA). The Secretary's 2012 Order was written to establish rules for concurrent operations in prospecting for and development and production of oil and gas and potash deposits owned by the United States within the designated Potash Area. The Potash Area completely encompasses the Known Potash Leasing Area, which was established for the administration of potassium leasing.

The SOPA is composed of four classifications respective to the density of core holes or geophysical inference: measured ore (potash enclave), indicated ore, inferred ore, and barren of potash ore.

The proposed project is located entirely within the SOPA. Much of the proposed project area (approximately 13.6 acres) is located within an area of indicated potash mineralization. Approximately 10.6 acres of the proposed project are within an area of measured potash ore mineralization, and 2.8 acres of the proposed project are within an area of inferred area potash ore mineralization (see Figure A.1 in Appendix A).

In areas of measured potash deposits, potash is known to exist in sufficient thickness and quality to be mineable under existing technology and economics. Areas of indicated potash mineralization have a low probability of potash deposits, where tonnage, grade, and mineral content are computed partly from specific measurements and samples, and partly from projection of geologic evidence. Areas of inferred potash mineralization may have potash deposits, based upon reasonably correlated data from lithologic descriptions and well logs, but for which tonnage and grade cannot be computed due to the absence of specific data.

Barren and/or minor potash mineralization areas are composed of sub-economic resources that would require a substantially higher market value or major cost-reducing technology for economical production. Sub-economic resources also include other minerals not presently being recovered.

3.7.2 Impacts from the Proposed Action

Direct and Indirect Impacts

Potential impacts of pipeline trenching could include migration of hydrocarbons through impermeable formations or fractures within the formations that might provide a conduit to mine workings. Any potential impacts created by trenching will be evaluated prior to future mining operations in this area being approved by BLM.

Reserves are lost because extraction of the reserves around the pipeline must be held to an amount where subsidence does not occur. Proposed projects can be expected to be relocated to minimize impacts to potash resources while allowing drainage of remote areas within the potash enclave.

Approximately 10.6 acres of the proposed project are located in an area that has measured potash reserves, which may affect economical potash reserves or resources. The remainder of the proposed project is located in areas with inferred or indicated potash reserves whose economical recovery might also be affected. The proposed project is located approximately 7.3 miles east of the active mine workings of Intrepid Potash North.

Mitigation Measures

Measures to minimize impacts to potash resources are described in the standard COAs (BLM 1997:Appendix 2) for buried and surface-installed pipelines. No special mitigation or requirements have been identified by the BLM.

3.8 Paleontological Resources

3.8.1 Affected Environment

Paleontological resources are any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth. Fossil remains may include bones, teeth, tracks, shells, leaves, imprints, and wood. Paleontological resources include not only the actual fossils but also the geological deposits that contain them and are recognized as non-renewable scientific resources protected by federal statutes and policies.

The primary federal legislation for the protection and conservation of paleontological resources occurring on federally administered lands includes the Paleontological Resources Preservation Act of 2009, the Federal Land Policy and Management Act, and NEPA. The BLM has also developed policy guidelines for addressing potential impacts to paleontological resources (BLM 1998a, 1998b, 2008c).

The Potential Fossil Yield Classification (PFYC) is a tool that allows the BLM to predict the likelihood of a geologic unit to contain paleontological resources. The PFYC is based on a numeric system of 1 to 5, with PFYC 1 having little likelihood of containing paleontological resources, whereas a PFYC 5 value is a geologic unit that is known to contain abundant scientifically significant paleontological resources (BLM 2007). The fossil resources of concern in this area are the remains of vertebrates, which include species of fish, amphibians, and mammals.

3.8.2 Impacts from the Proposed Action

Direct and Indirect Impacts

Direct impacts would result in the immediate physical loss of scientifically significant fossils and their contextual data. Impacts indirectly associated with ground disturbance could subject fossils to damage or destruction from erosion, as well as create improved access to the public and increased visibility, potentially resulting in unauthorized collection or vandalism. However, not all impacts of construction are detrimental

to paleontology. Ground disturbance can reveal significant fossils that would otherwise remain buried and unavailable for scientific study. In this manner, ground disturbance can result in beneficial impacts. Such fossils can be collected properly and curated into the museum collection of a qualified repository, making them available for scientific study and education.

The location of the proposed project is within one geologic unit: Qp, piedmont alluvial deposits from the upper and middle Quaternary. This geologic unit is classified as PFYC 2, where management concern is generally low. A pedestrian survey for paleontological resources was not necessary and no impacts to paleontological resources are expected.

Mitigation Measures

Measures to minimize impacts to paleontological resources are described in the standard COAs (BLM 1997:Appendix 2) for buried and surface-installed pipelines. No special mitigation or requirements have been identified by the BLM.

3.9 Livestock Grazing

3.9.1 Affected Environment

Almost all livestock grazing within the BLM CFO planning area is permitted for year-round use. Permitted livestock numbers for each allotment are set at levels that provide for plant recovery to enhance rangeland health. These levels have been determined by quantitative measurements of forage present. Prolonged drought and rangeland wildfire continue to threaten rangeland health and forage availability within and near the proposed project area.

Livestock grazing is common within the proposed project area and could include grazing of domestic cattle, sheep, goats, and horses. The proposed project area coincides with one BLM allotment within the CFO planning area (Table 3.7).

Table 3.7. BLM CFO Allotments and Range Improvements in the Proposed Project Area

CFO Allotment Name	Allotment Number	Size of Project Area within Allotment (acres)	Allotment Size (acres)	No. of Fences Crossed by Project Area	No. of Water Lines Crossed by Project Area	No. of Water Troughs within 200 Meters of Project Area
Halfway	76021	27.0	17,202	1	0	0

3.9.2 Impacts from the Proposed Action

Direct and Indirect Impacts

Direct and indirect impacts from the proposed project were assessed by calculating the number of acres and grazing allotments that would incur surface disturbance and the resulting loss of vegetation for forage. Construction of the Proposed Action would remove approximately 27.0 acres of vegetation from the active grazing allotments, which represents less than 1%, a negligible difference, of the total allotment acreage intersected by the Proposed Action. The resulting loss of vegetation would not affect the animal unit months authorized for livestock use in this area.

Range improvements would also be temporarily impacted by the proposed project. One pasture fence would be crossed by the proposed project. Prior to construction, the conditions of the fence would be evaluated and appropriate protections would be put in place to maintain its function during the construction of the proposed project.

Short-term impacts could include displacement of permitted livestock during construction activities or exposure of livestock to hazards (e.g., falling into excavations and ingesting plastic). Because the proposed

project area is open range, there is also the possibility of injuries to livestock or death due to collisions with vehicles. After construction, livestock should become acclimated to proposed project operation activities.

Mitigation Measures

Measures to minimize impacts to range resources are described in the standard COAs (BLM 1997:Appendix 2) for buried and surface-installed pipelines. No special mitigation or requirements have been identified by the BLM.

3.10 Special Designation Areas

3.10.1 *Affected Environment*

The proposed project does not overlap any special designation areas (SDAs) as designated under the current RMP (BLM 1988; BLM 1997). The closest SDA, the Laguna Plata Special Management Area, is located approximately 3.9 miles west of the proposed project.

However, approximately 8.0 acres of the proposed project overlap the Salt Playas proposed Area of Critical Environmental Concern (ACEC). The overlap occurs entirely on BLM lands. The Salt Playas ACEC (49,772 acres) was proposed in order to protect cultural and wildlife resource values. To accomplish this, three objectives have been defined for the proposed ACEC (BLM 2018):

- Restrict surface-disturbing activities in playas to protect invertebrates, vertebrates, and birds and their habitat.
- Protect the integrity and functionality of the hyper saline playas.
- Protect the cultural landscape around the playas.

Under the current RMP, the proposed ROW project is not in a ROW exclusion area (BLM 1988, 1997).

3.10.2 *Impacts from the Proposed Action*

Direct and Indirect Impacts

Approximately 8.0 acres of the proposed project overlap the Salt Playas proposed ACEC. Long-term impacts would be avoided, as there would be no permanent structures within the proposed ACEC.

Short-term impacts to vegetation communities and wildlife habitat would occur during pipeline construction and would persist until revegetation of the proposed project area is achieved. However, all disturbed areas within the proposed ACEC would be reclaimed following construction. See Section 3.4 for vegetation disturbance mitigation measures.

Short-term impacts to wildlife within the proposed ACEC could result from changes in activity patterns due to construction, increased human activity, and noise disturbance. See Section 3.5 for wildlife disturbance mitigation measures.

The portion of the proposed project located within the Salt Playas proposed ACEC is within the PBPA. Therefore, no cultural resources surveys were conducted within the proposed ACEC. A biological resources survey was conducted in December 2018. No playas, other water features, or special-status species were observed. Therefore, the proposed project is not anticipated to impact or conflict with any of the protected values of the Salt Playas proposed ACEC.

Additional details on water features and wildlife and special-status species observed during the December 2018 surveys are presented in Sections 3.2 and 3.5, respectively.

Mitigation Measures

Measures to minimize impacts from spills or leaks are described in the standard COAs (BLM 1997: Appendix 2) for buried and surface-installed pipelines. Additionally, as appropriate, the BLM incorporates best management practices into proposed project approvals after NEPA evaluation of the proposed project. Best management practices are economically feasible mitigation measures applied on a site-specific basis to reduce, prevent, or avoid adverse environmental or social impacts.

3.11 Public Health and Safety

3.11.1 *Affected Environment*

The proposed project is located in an area with established oil and gas exploration, development, transportation, and processing operations with the accompanying pipelines, drilling rigs, pumpjacks, traffic, and other related activities. During construction of the proposed project, physical hazards such as heavy machinery would be present.

A small number of seasonal recreation users (e.g., hunters and off-highway vehicle riders) may occasionally be in the vicinity of the proposed project area. However, these users are warned about possible hazardous conditions in the project area through posted signs and would have limited access to the proposed project area during construction.

3.11.2 *Impacts from the Proposed Action*

Direct and Indirect Impacts

Some risk is inherent in any construction project, and this could include the risk of contamination to soil through improper disposal of waste, leaks from equipment, or accidental releases. There is also potential for releases of hazardous materials from the proposed pipeline during operation.

When significant amounts of chemicals are stored on-site, governmental agencies would be notified as required under the Emergency Planning and Community Right-to-Know Act. The notification of hazardous substance releases outside the facility site is required under the Comprehensive Environmental Response, Compensation, and Liability Act and New Mexico Administrative Code 19.05.29. All facilities must have informational signs, as directed under 43 CFR 3160.

The increase in traffic to area roads during construction could pose a hazard to other vehicles and road users. However, area roads are already used by oil and gas traffic, and users would be accustomed to the types of vehicles necessary for construction. The increase in vehicles would be spread across the project area, and drivers would be warned of possible hazards by appropriate signage and would be expected to follow all rules of the road. This impact to area roads would be short term for construction of the proposed project and would lessen considerably during the operations phase.

Mitigation Measures

Measures to minimize impacts from spills or leaks are described in the standard COAs (BLM 1997: Appendix 2) for buried and surface-installed pipelines. No special mitigation or requirements have been identified by the BLM.

3.12 Cumulative Impacts

A cumulative impact, as defined in 40 CFR 1508.7, is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other action. The time frame for the cumulative impact analysis is 30 years, i.e., the projected life of operation and abandonment of the proposed pipeline and facility.

3.12.1 Cumulative Impact Analysis for Air Resources

The following analysis of cumulative impacts of the Proposed Action to air resources is limited to the CFO planning area. The Air Resources Technical Report provides a list of major sources⁷ for air pollutants in New Mexico, any of which may contribute to cumulative impacts to air quality within the planning area (see BLM 2016:Appendix D). The report also evaluates the cumulative impacts of GHGs emissions and their relationship to climate change at national and global levels (BLM 2016:54–60).

Activities that cumulatively contribute to levels of air pollutants and GHG emissions in southeast New Mexico result from a variety of sources, including fossil fuel industries, transportation, industrial construction, mining, and others. For the CFO planning area, activities that have the greatest impact to air resources are fossil fuel production (e.g., oil and gas exploration and production, crude oil refining, and gas processing) and vehicular travel (BLM 2016:46). The Air Resources Technical Report summarizes the past, present, and reasonably foreseeable impacts to air resources resulting from these activities (BLM 2016:38–51).

The CFO manages federal oil and gas exploration and production on its mineral estate in Eddy and Lea Counties and part of Chaves County. These activities result in cumulative impacts to air resources in the CFO planning area through air pollutant and GHG emissions. There are currently 28,579 oil and gas wells within these counties categorized as active, new, or temporarily abandoned, with 11,746 of these located on federal lands (Petroleum Recovery Research Center 2019). Quantifying emissions of an oil and gas well in the CFO planning area is difficult due to various factors (geology, variation in drilling technique and time, uncertainty of production). However, the BLM has determined that well production typically declines over time, depending on well life and the price of oil and gas. Therefore, it is assumed that declining production would also result in reduced emissions over time (BLM 2016:31).

Factors involving vehicular travel, including number and types of vehicles, miles traveled, and road condition, all influence emissions in the CFO planning area. These emissions result from both on-road and off-road vehicular travel. While increased vehicle fuel efficiency is expected to reduce emissions associated with vehicular travel, any reduction in emissions may eventually be offset by an increase in the number of vehicles used due to population growth in the area (BLM 2016:51).

Air Quality

The Proposed Action would result in a very small increase in emissions and would not cause or contribute to an exceedance of the NAAQS for any criteria pollutants in the CFO planning area. Additionally, emissions from the Proposed Action, together with all other emissions, are not expected to impact the 8-hour average O₃ standard. The applicable regulatory thresholds for HAPs associated with the oil and gas industry are established under the National Emissions Standards for Hazardous Air Pollutants, which are currently under review by the EPA.

Climate Change

Climate change is a global process affected by the total GHG emissions in the atmosphere. The Air Quality Technical Report discusses the relationship of past, present, and future predicted emissions to climate change and the limitations in predicting global and regional impacts related to emissions (BLM 2016:51–53). In general, the Proposed Action, together with all other current and foreseeable emissions-producing actions, would contribute to an incremental increase in GHGs; however, these cumulative emissions would not have a measurable impact to climate. While the Proposed Action may contribute to climate change, the specific impacts to global or regional climate are not quantifiable, and the Proposed Action's contribution, in a localized area, to impacts to global climate change cannot be determined (BLM 2016:53).

⁷ Sources emitting more than 100 tons per year of CO, volatile organic compounds, NO_x, SO₂, PM_{2.5}, or PM₁₀ (BLM 2016:38).

3.12.2 Cumulative Impacts for Watersheds and Drainages, Soils, Vegetation and Invasive Species, Wildlife Including Special-Status Species, Livestock Grazing, and Special Designation Areas

The watershed intersected by the Proposed Action was chosen for the cumulative geographic scope for watersheds and drainages, soils, vegetation, wildlife, and livestock grazing resources because it is an area with clear natural topographical boundaries with vegetation connectivity, similar soil types, and hydrological functionality. The watershed scope is also applicable to analyzing cumulative impacts to grazing lands on all land jurisdictions considered in this EA.

Impacts to watershed drainages, soils, vegetation and invasive species, wildlife and special-status species, livestock grazing, and special designations would depend on the placement and type of surface disturbance, the type of soils and plant species present, and the hydrologic conditions within the individual project sites. Generally, soil erosion and sedimentation of local drainages would be expected to occur, especially when storm events occur during construction of the future actions. Cumulative impacts to groundwater are difficult to estimate because, as with the Proposed Action, impacts to groundwater would occur from accidental spills during construction or operation that would reach the water table.

Generally, native vegetation loss and the spread of noxious weeds would be expected to occur, especially during construction of the future actions. Further development in the area would potentially result in the loss of vegetation and thereby a loss of forage available to livestock within the grazing allotments located in the cumulative impact analysis area. The resulting loss of forage could reduce the animal unit months authorized for livestock use in the area. Reclamation of some disturbed areas and use of best management practices, such as reseeding construction areas, has reduced impacts to vegetation and livestock grazing conditions. In time, the reclaimed and seeded areas would result in stable plant communities with densities that are similar to the pre-disturbance plant densities. Similarly, impacts to visual resources would depend on the success of revegetation to blend the landscape within the individual project site. In time, the reclaimed and seeded areas would minimize impacts to visual resources.

Surface-disturbing activities affect wildlife, migratory birds, and special-status species through decreasing available forage and habitat and causing habitat alteration and fragmentation. Well pads and road density break the available habitat into smaller and smaller pieces, which can lead to displacement and physiological stress in wildlife species. Fragmentation results in indirect habitat loss and degradation. Wildlife species would have to expend an increased amount of energy to avoid disturbed areas or when experiencing alarm due to human presence, traffic, and associated noise.

Watkins et al. (2007) describe quantitative thresholds of fragmentation impact as moderate, high, and extreme, based on the density of well pads per section and cumulative surface disturbance. Moderate impact is defined as one to four wells and less than 20 acres of disturbance per section. High impact is defined as five to 16 wells and 20 to 80 acres of disturbance per section. Extreme impact is defined as more than 16 wells and greater than 80 acres of disturbance per section. Based on the above-described definitions, the density of current oil and gas development is high within the project area. This indicates that impacts to wildlife are increasingly difficult to mitigate and may not be completely offset by management and habitat treatments (Watkins et al. 2007).

3.12.3 Cumulative Impact Analysis for Potash Minerals

The time frame for the cumulative impact analysis encompasses the projected life of construction, production, and abandonment of this pipeline. Intrepid Potash eventually plans to mine the measured ore reserves in those areas to the west. Only the pipeline, permanent easement, and temporary workspaces will be required as part of the proposed project. The area may also be subjected to additional surface-disturbing activity caused by seismic operations in order to delineate any newly discovered oil field(s).

3.12.4 *Cumulative Impact Analysis for Cultural and Historic Resources and Paleontological Resources*

No cumulative effect to cultural or historic resource sites or paleontological resources would occur because no cultural or historic sites or known paleontological remains would be impacted by the Proposed Action.

4 SUPPORTING INFORMATION

4.1 List of Preparers

This EA was prepared by a third-party contractor, SWCA, according to the direction of the BLM CFO. The following BLM staff contributed to or reviewed this EA.

- Tessa Cisneros, Realty Specialist, BLM CFO
- Bruce Boeke, Archaeologist, BLM CFO

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**APPENDIX A. PROJECT AREA WITH NATURAL
RESOURCES MAP AND PROJECT
PHOTOGRAPHS**

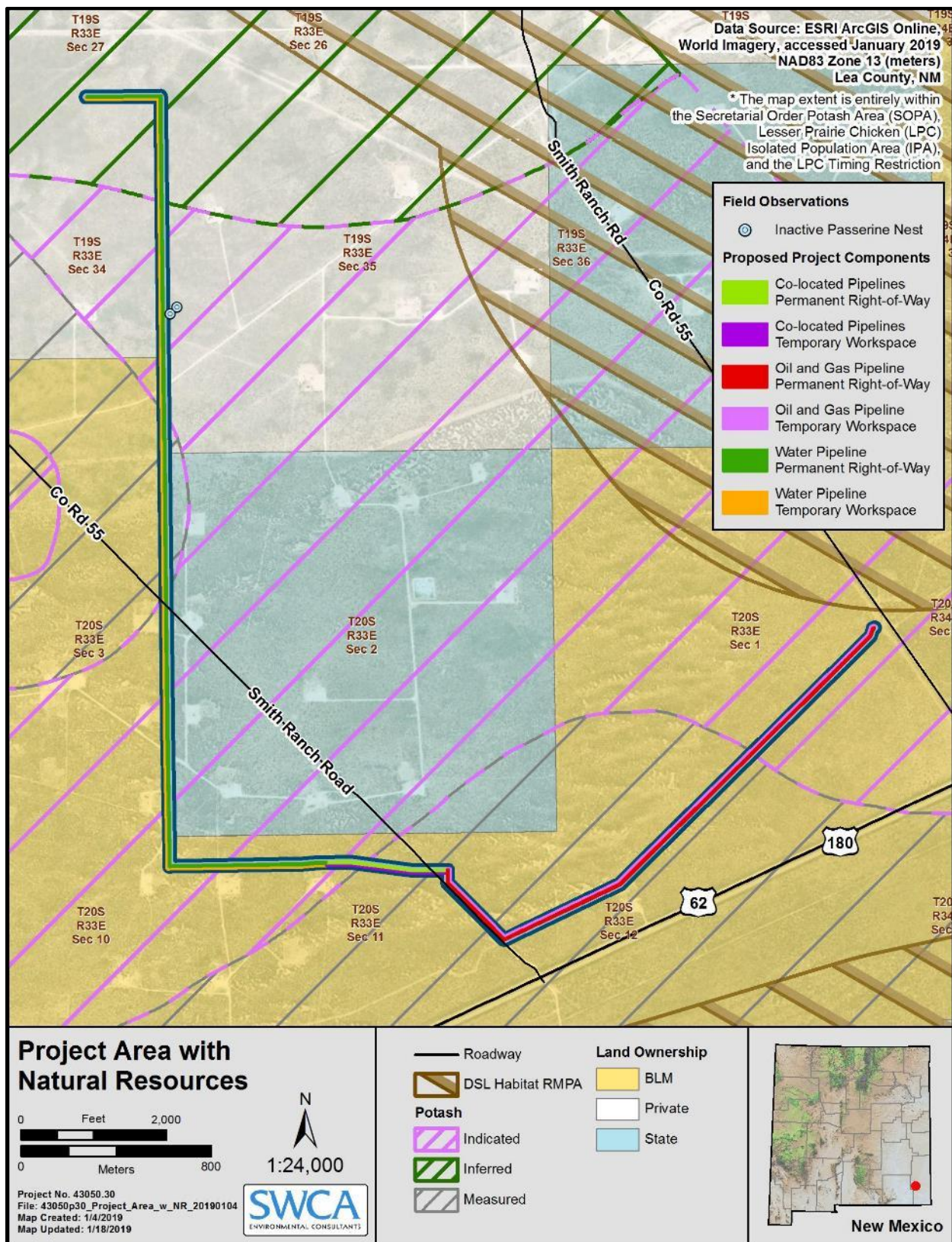


Figure A.1. Project area map with natural resources data.



Figure A.2. View of the desert grassland vegetation community with existing disturbance within the proposed project area, facing north.



Figure A.3. View of the desert grassland vegetation community with existing disturbance within the proposed project area, facing east.



Figure A.4. View of the duneland vegetation community with existing disturbance within the proposed project area, facing north.



Figure A.5. View of the duneland vegetation community with existing disturbance within the proposed project area, facing east.



Figure A.6. View of the duneland vegetation community with existing disturbance within the proposed project area, facing south.

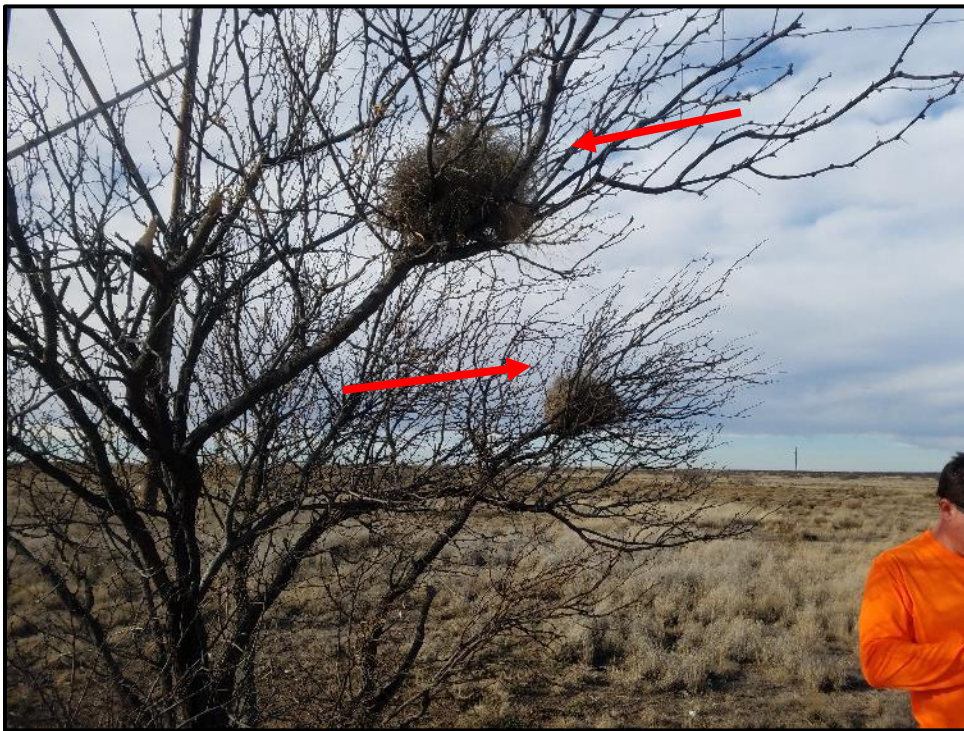


Figure A.7. Inactive passerine nests in poor condition within honey mesquite within the proposed project area.

APPENDIX B. SPECIAL-STATUS SPECIES LIST

Table B.1. Special-Status Species for Lea County, New Mexico

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Plants			
Allred's flax (<i>Linum allredii</i>)	BLM Sensitive	Occurs on scarps and hillsides of exposed sandy gypsum of the Permian-aged Castile Formation in Chihuahuan desertscrub at 3,900 feet above mean sea level (amsl). This species' range occurs in the northern Chihuahuan Desert of New Mexico and Texas.	Unlikely to occur in the proposed project area due to lack of sandy gypsum soils. Additionally, the highest elevation in the proposed project area is 3,606 feet amsl and the project area is outside of this species' known distribution range (BLM 2018).
Chapline's columbine (<i>Aquilegia chaplinei</i>)	BLM Sensitive	Occurs in Eddy and Otero Counties, New Mexico. Prefers limestone seeps and springs in montane scrub or riparian canyon bottoms at 4,600–5,600 feet amsl.	Unlikely to occur in the proposed project area due to lack of limestone seeps and springs in montane scrub or riparian canyons. In addition, the highest elevation in the proposed project area is 3,606 feet amsl.
Gypsum milkvetch (<i>Astragalus gypsodes</i>)	BLM Sensitive	Occurs in gypsum flats and low-gullied gypseous hills of the Permian-aged Castile formation from 3,500 to 4,000 feet amsl.	Unlikely to occur in the proposed project area due to lack of gypseous hills within the proposed project area.
Gypsum wild-buckwheat (<i>Eriogonum gypsophilum</i>)	USFWS T NM E	Restricted to almost pure gypsum soil that is sparsely vegetated with other gypsophilous plants, such as Coldenia hispidissima (<i>Coldenia hispidissima</i>), gypsum blazingstar (<i>Mentzelia humilis</i>), and southwestern ringstem (<i>Anulocaulis leiosolenus</i>) along ridges and slopes along gypsum outcrops within semi-arid conditions. Elevation 3,200–3,600 feet amsl. The species is known to occur in four distinct locations: Ben Slaughter Draw–Hay Hollow, North Seven River, South Seven River, and Threemile Draw–Black River watersheds.	Unlikely to occur in the proposed project area due to lack of gypsophilous plants and pure gypsum soils. Additionally, the proposed project area is not in the known distribution area of this species (BLM 2018).
Guadalupe mescalbean (<i>Dermatophyllum guadalupense</i>)	BLM Sensitive	Occurs on outcrops of pink, limy, fine-grained sandstone that is 1–2 percent gypsum in Chihuahuan desertscrub and juniper savannah from 5,260 to 6,650 feet amsl.	Unlikely to occur in the proposed project area due to lack of pink, limy, fine-grained sandstone soils. In addition, the highest elevation in the proposed project area is 3,606 feet amsl.
Guadalupe penstemon (<i>Penstemon cardinalis</i> ssp. <i>regalis</i>)	BLM Sensitive	Prefers limestone slopes and canyon bottoms in montane scrub, pinon-juniper woodland, and lower montane coniferous forest from 4,500 to 6000 feet amsl.	Unlikely to occur in the proposed project area due to lack of limestone slopes and canyon bottoms. In addition, the highest elevation in the proposed project area is 3,606 feet amsl.

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Jewelflower (<i>Streptanthus sparsiflorus</i>)	BLM Sensitive	Occurs in limestone canyon bottoms and montane scrub from 5,000 to 7,000 feet amsl.	Unlikely to occur in the proposed project area due to lack of limestone canyon bottoms and montane scrub. In addition, the highest elevation in the proposed project area is 3,606 feet amsl.
Scheer's beehive cactus (<i>Coryphantha robustispina</i> var. <i>scheeri</i>)	BLM Sensitive	Typically associated with gravelly or silty soil in desert grassland and Chihuahuan desertscrub. May also be found on rocky benches or bajadas on limestone or gypsum; the elevation range of this cactus is 3,300–3,600 feet amsl.	Although Chihuahuan desert mixed scrubland and grassland is present in the proposed project area, the soils are sandy and lack rocky benches or bajadas on limestone or gypsum. The proposed project area is also outside the species' known distribution area.
Tharp's blue-star (<i>Amsonia tharpai</i>)	BLM Sensitive	Known from three distinct populations near Artesia and Carlsbad (Red Lake, Cedar Canyon, Ben Slaughter/Yeso Hills). Grows in soils with a limestone or gypsum component in rolling hills of Chihuahuan desertscrub communities; 3,100–3,500 feet amsl.	Unlikely to occur in the proposed project area due to lack of limestone and gypsum components. The proposed project area is outside the species' known distribution area.
Wind Mountain rock-cress (<i>Boechera zephyra</i>)	BLM Sensitive	Found on rocky syenite, limestone, or basaltic scoria slopes. Primarily occurs in the upper margins of Chihuahuan desertscrub, occasionally in juniper savannah, or oak-juniper woodlands. This species has not been verified within the CFO planning area.	Unlikely to occur in the proposed project area due to lack of rock syenite, limestone, or basaltic scoria slopes. Additionally, this species has not been verified within the CFO planning area.
Wright's marsh thistle (<i>Cirsium wrightii</i>)	USFWS C BLM Sensitive	Wet, alkaline soils in spring seeps and marshy edges of streams and ponds from 3,450 to 8,500 feet amsl. This species occurs in Eddy County, New Mexico, with concentrated populations near Blue Spring.	Unlikely to occur in the proposed project area due to lack of spring seeps, marshes, and streams. Additionally, the proposed project area is outside of this species' distribution range.
Wright's water willow (<i>Justicia wrightii</i>)	BLM Sensitive	Found on limestone benches in Chihuahuan desertscrub at 3,900 feet amsl.	Unlikely to occur in the proposed project area due to lack of limestone benches. Additionally, the highest elevation in the proposed project area is 3,606 feet amsl.

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Birds			
Baird's sparrow (<i>Ammodramus bairdii</i>)	NM T BLM Sensitive	This species is a winter resident in New Mexico. It has been found on Otero Mesa and in the Animas Valley and may occur in other areas of suitable winter habitat, particularly in the southeast portion of the state. Generally prefers dense, extensive grasslands with few shrubs. Avoids heavily grazed areas.	Unlikely to occur in the proposed project area due to lack of dense, extensive grasslands with few shrubs.
Bald eagle (<i>Haliaeetus leucocephalus alascanus</i>)	BLM Sensitive NM T	Occurs in New Mexico year-round. Breeding is restricted to a few areas mainly in the northern part of the state along or near lakes. In migration and during winter months, the species is found chiefly along or near rivers and streams and in grasslands associated with large prairie dog (<i>Cynomys</i> sp.) colonies. Typically perches in trees.	Unlikely to occur in the proposed project area due to the lack of water bodies, trees, and preferred prey species.
Bell's vireo (<i>Vireo bellii</i>)	BLM Sensitive NM T	In New Mexico, Bell's vireo occurs in the southern third of the state during the breeding season. The <i>medius</i> race is found in the Pecos Valley north to drainages west of Roswell, and in the Black River and Rattlesnake Springs areas south of Carlsbad. In New Mexico, this species characteristically occurs in dense shrubland or woodland along lowland stream courses, with willows (<i>Salix</i> sp.), mesquite (<i>Prosopis</i> sp.), and seepwillows (<i>Baccharis glutinosa</i>). Its distribution during breeding is typically limited to riparian habitats.	Unlikely to occur in the proposed project area due to lack of dense vegetation or riparian habitat.
Black tern (<i>Chlidonias niger surinamensis</i>)	BLM Sensitive	Found in New Mexico only during migration and in association with wetland areas, lakes, and ponds.	Unlikely to occur in the proposed project area due to lack of wetlands, lakes, or ponds.
Broad-billed hummingbird (<i>Cynanthus latirostris</i>)	NM T	Occurs in riparian habitat or dense mesquite in canyons in southwestern New Mexico. Found in Guadalupe Canyon in Hidalgo County and rarely found in the Peloncillo Mountains.	Unlikely to occur in the proposed project area due to lack of riparian habitat or dense mesquite in a canyon. The proposed project area is outside known species distribution area.
Burrowing owl (<i>Athene cunicularia hypugaea</i>)	BLM Sensitive	Present mainly during the breeding season in the northern half of the state and present year-round in the southern half. Found in grasslands especially in association with prairie dog colonies, in desertscrub, and in agricultural and semi-urban environments. Depends on prairie dogs, rock squirrels (<i>Otospermophilus variegatus</i>), and other fossorial mammals for the availability of nest burrows.	Species is unlikely to occur in the proposed project area due to lack of prairie dog colonies to provide suitable burrows.

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Chestnut-collared longspur (<i>Calcarius ornatus</i>)	BLM Sensitive	Chestnut-collared longspurs migrate and winter in the east, westward locally to the vicinity of the Rio Grande Valley (occasionally farther) in the southwest, and are considered uncommon to abundant. They are most numerous in the southernmost area and are regular in the Mogollon Plateau (Hubbard 1978). Chestnut-collared longspurs were often seen within, or in association with, open grassland habitats. Those sites that were used most often were dominated by desert saltgrass (<i>Distichlis spicata</i>), with occasional clumps of fourwing saltbush (<i>Atriplex canescens</i>) interspersed. Adjacent sites having an even greater shrub component were also occasionally utilized (Baltosser 1991).	Unlikely to occur in the proposed project area due to lack of desert saltgrass and fourwing saltbush vegetation communities.
Ferruginous hawk (<i>Buteo regalis</i>)	BLM Sensitive	Occurs year-round in New Mexico. During the breeding season, it is present in grasslands, badlands, and along the ecotone between grasslands and piñon-juniper woodlands, especially in the vicinity of prairie dog towns. During the winter, ferruginous hawks are primarily associated with grasslands but may be found in other habitat types such as ponderosa pine (<i>Pinus ponderosa</i>) forest. Prairie dogs are important year-round in the diet of New Mexico's ferruginous hawks.	Unlikely to occur in the proposed project area due to lack of badlands, piñon-juniper woodlands, ponderosa pine forests, or prairie dog colonies.
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	BLM Sensitive	Found in grasslands and prairies with open patches of ground. It nests on the ground in a small cup-nest constructed out of grasses. Avoids areas with extensive stands of shrubs.	Unlikely to occur in the proposed project area due to lack of extensive grasslands or prairie vegetation communities.
Interior least tern (<i>Sterna antillarum athalassos</i>)	NM E	Migratory species occurring in North America during the breeding season, when it is associated with water (e.g., lakes, reservoirs, rivers). In New Mexico, breeding is restricted to the Pecos River basin. It is known to breed primarily at Bitter Lake National Wildlife Refuge in nearby Chaves County.	Unlikely to occur in the proposed project area due to lack of suitable water bodies.

Common Name (Species Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Lesser prairie-chicken (<i>Tympanuchus pallidicinctus</i>)	BLM Sensitive	This species occurs in southeastern New Mexico primarily in shinnery oak (<i>Quercus havardii</i>) or sand sagebrush (<i>Artemisia filifolia</i>) grasslands. Also occurs in shinnery oak–bluestem habitats dominated by sand bluestem (<i>Andropogon hallii</i>), little bluestem (<i>Schizachyrium scoparium</i>), sand dropseed (<i>Sporobolus cryptandrus</i>), threeawn (<i>Aristida</i> sp.), and blue grama (<i>Bouteloua gracilis</i>).	May occur in the proposed project area due to the presence of marginally suitable habitat, including shinnery oak and blue grama plant species, that is preferred by this species. However, the project area lacks the extensive grass-prairie habitat preferred by this species. The proposed project area is within the LPC isolated population area and timing restriction zone (BLM 2008a). This species was not observed during the 2018 biological survey of the proposed project area.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	BLM Sensitive	The loggerhead shrike is a year-round resident in New Mexico and is found throughout the state primarily in open country including grasslands, improved pastures, hayfields, shrub steppe, and desertscrub, as well as piñon-juniper woodland and woodland edges.	May occur in the proposed project area due to the presence of marginally suitable habitat, including grasslands. This species was not observed during the 2018 biological survey.
Mexican whip-poor-will (<i>Antrostomus arizonae</i>)	BLM Sensitive	Whip-poor-wills summer in the mountains of the south (Mogollon and Sacramento highlands southward), north to the Manzano Mountains and are considered rare to fairly common. They are found in the Manzano, Gallinas, and White Mountains. Their northern summer limits appear to be the San Francisco, Datil, Magdalena, Sacramento, Guadalupe, and Sandia Mountains (Hubbard 1978). Occurs in Desert Riparian Deciduous Woodland, Marsh. Woodlands, especially of cottonwood (<i>Populus</i> sp.), that occur where desert streams provide sufficient moisture for a narrow band of trees and shrubs along the margins (USDA 1991). This species has not been verified in the CFO planning area.	Unlikely to occur in the proposed project area due to lack of riparian habitat.
McCown's longspur (<i>Calcarius mccownii</i>)	BLM Sensitive	In New Mexico, McCown's longspurs migrate in the northeast and winter in the southeast and extreme southwest and are considered rare to uncommon and local (Hubbard 1978). Found in Sonoran desertscrub; Chihuahuan desertscrub; annual grasslands, farms; mountain and alpine meadows: Sonoran desertscrub. Open to dense vegetation of shrubs, low trees, and succulents, dominated by paloverde (<i>Cercidium microphyllum</i>), pricklypear (<i>Opuntia</i> spp.), and giant saguaro (<i>Cereus giganteus</i>) (USDA 1991).	Unlikely to occur in the proposed project area due to lack of paloverde, pricklypear, or giant saguaro cactus dominated habitat.

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Northern aplomado falcon (<i>Falco femoralis septentrionalis</i>)	USFWS ENEP NM E	Associated with semi-desert grasslands with scattered yuccas, mesquite, and cacti. Naturally occurring populations are essentially restricted to the southern tier of New Mexico. Experimental populations have also been reintroduced on the Armendaris Ranch in Socorro and Sierra Counties and on lands administered by the BLM, White Sands Missile Range, and the SLO beginning in 2006.	Unlikely to occur in the proposed project area. According to the BLM CFO, the species' range is not known to exist east of the Pecos River.
Northern goshawk (<i>Accipiter gentilis atricapillus</i>)	BLM Sensitive	Strongly associated with montane forests during breeding and in winter. Migrating populations typically follow forested ridges.	Unlikely to occur in the proposed project area due to the lack of montane forests.
Painted bunting (<i>Passerina ciris</i>)	BLM Sensitive	Painted buntings breed in dense brush, often adjacent to thick, grassy areas or woodland edges. During migration and winter, they favor dense, weedy habitats, as well as the understory of semi-open forest.	Unlikely to occur in the proposed project area due to lack of dense brush, thick grassy areas, or woodland edges.
Peregrine falcon (<i>Falco peregrinus</i> ; <i>F. p. tundrius</i>)	NM T	Found in New Mexico year-round. All nests in New Mexico are found on cliffs. In migration and during winter months, New Mexico's peregrine falcons are typically associated with water and large wetlands.	Unlikely to occur in the proposed project area due to the lack of water, large wetlands, and cliffs.
Pinyon Jay (<i>Gymnorhinus cyanocephalus</i>)	BLM Sensitive	Pinyon jays are variably residents in mainly middle elevation areas containing pinyon-juniper woodlands almost statewide and are considered uncommon to locally abundant (Hubbard 1978). This species has not been verified in the CFO planning area.	Unlikely to occur in the proposed project area due to lack pinyon-juniper habitat, and this species has not been reported in the CFO planning area.
Sprague's pipit (<i>Anthus spragueii</i>)	BLM Sensitive	Occurs in New Mexico only as a sporadic winter resident. Its distribution in the state is not well known but includes the lower Pecos River valley, Otero Mesa, and the Animas Valley. It is associated with southern desert grasslands of the state. Species as a whole prefers dry, open grasslands.	Unlikely to occur in the proposed project area due to lack of extensive open grasslands.
Virginia's warbler (<i>Vermivora virginiae</i>)	BLM Sensitive	In Hubbard's survey of the Mogollon Mountains (Catron County), this warbler was fairly common in brushy growth in riparian spruce woodland, along with orange-crowned warblers, and in the pine-fir ecotone, especially where Gambel oak (<i>Quercus gambelii</i>) occurred (Hubbard 1965).	Unlikely to occur in the proposed project area due to lack of riparian spruce woodland.

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
White-faced ibis (<i>Plegadis chihi</i>)	BLM Sensitive	Uncommon in New Mexico, where it is found statewide during migration and as a (typically non-breeding) summer resident. Breeding recorded only at Tucumcari and at Stinking Lake in Rio Arriba County. Found in association with water. Generally seen in association with shoreline and marsh habitats adjacent to open water. Nesting colonies are located in shrubs and low trees or in dense standing reeds and tules near or in marshes. Forages along the water's edge or in fields.	Unlikely to occur in the proposed project area due to lack of water bodies and wetlands.
Fish			
Bigscale logperch (<i>Percina macrolepida</i>)	BLM Sensitive	Native to the Pecos River drainage, occurring mainly in and below Sumner Lake in De Baca County and between Lake McMillan (Eddy County) and the Texas state line. Smaller populations are found also near Santa Rosa, the Black River, and Willow Lake in Eddy County. Also introduced in Ute Lake in Quay County. The species' preferred habitat consists of strong, non-turbulent flows, but the species is also found in impoundments. Preferred substrate varies from silt to rubble on which the species spends much of its time resting.	Unlikely to occur in the proposed project area due to lack of perennial water bodies.
Blue sucker (<i>Cycleptus elongatus</i>)	BLM Sensitive	Historically, this species occurred in the Pecos River, from which it has likely been extirpated. It is absent in the Rio Grande where it occurred historically. This species extant in the Black River is unknown. Its primary habitat consists of deep river channels with runs and riffles. Also found in pools with moderate currents and in deep lakes. This species is part of the Candidate Conservation Agreement (CCA).	Unlikely to occur in the proposed project area due to lack of perennial water bodies.
Gray redbhorse (<i>Moxostoma congestum</i>)	BLM Sensitive	Formerly occurred in the Pecos River and the Rio Grande but now restricted to the lower Black River from Blue Spring to the Pecos River Confluence. This species has been reintroduced into the Delaware River by the NMDGF. This species is part of the CCA. Typical habitat consists of low-gradient streams with warm, usually clear waters. Adults most often occupy medium to large pools with cobble, gravel, silt, or sand bottoms. The young and juveniles tend to seek riffles and gravelly runs and avoid densely vegetated areas.	Unlikely to occur in the proposed project area due to lack of perennial water bodies.

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Greenthroat darter (<i>Etheostoma lepidum</i>)	BLM Sensitive	Native to the Pecos River drainage of Chaves and Eddy Counties. Known to occur in particular at Blue Spring and its outflow stream, in the Pecos River between Lake McMillan and Avalon Reservoir, in the Rio Peñasco and Cottonwood Creek, and at Bitter Lake National Wildlife Refuge. Found in swift-flowing streams and springs, especially vegetated riffle areas with gravel and rubble substrates. Also occurs in clear ponded-water habitats including sinkholes and littoral areas of other lentic systems with wave action and aquatic vegetation rooted in a gravel substrate.	Unlikely to occur in the proposed project area due to lack of perennial water bodies.
Headwater catfish (<i>Ictalurus lupus</i>)	BLM Sensitive	Occurs in Texas, New Mexico, and Mexico. It is native to the Pecos drainage downstream of Sumner Reservoir and also occurs in the Middle Rio Grande Basin. Its habitat consists of clear temperate waters generally with a moderate gradient. Despite competition with the channel catfish (<i>Ictalurus punctatus</i>), has persisted in headwater streams and in fluctuating tailwaters of dams in the Pecos River.	Unlikely to occur in the proposed project area due to lack of perennial water bodies.
Mexican tetra (<i>Astyanax mexicanus</i>)	BLM Sensitive	Species' distribution extends from eastern New Mexico and southern Texas southward along the Atlantic slope drainages of Mexico. In New Mexico restricted largely to Blue Spring and the Delaware River in Eddy County. Also found occasionally in the Pecos River below Lake McMillan. Occupies a variety of habitats but tends to school in pools and below swift areas in eddies. Found primarily in habitats with stenothermal flows (i.e., springs). Young-of-year present in shallow water near overhanging bank vegetation.	Unlikely to occur in the proposed project area due to lack of perennial water bodies.
Pecos pupfish (<i>Cyprinodon pecosensis</i>)	BLM Sensitive NM T	Occurs in saline springs and gypsum sinkholes at Bitter Lake National Wildlife Refuge and Bottomless Lakes State Park. Elsewhere, it is present irregularly in the Pecos River south from Bitter Lake and Bottomless Lakes State Park south to the Texas state line and formerly in Laguna Grande in Eddy County. Typical habitat consists of saline springs and gypsum sinkholes; only rare in fresher water habitats, including the main channel of the Pecos River. Found in backwater areas and side pools that lack sunfish or other predators. At Bitter Lake National Wildlife Refuge, numerous individuals were taken from waters in interstices of gravel from a pond drain with no surface flow.	Unlikely to occur in the proposed project area due to lack of perennial water bodies.

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Rio Grande shiner (<i>Notropis jemezanus</i>)	BLM Sensitive	Occurs in the Rio Grande downstream of the confluence of the Rio Conchos but is extirpated from the Rio Grande in New Mexico. In the Pecos River in New Mexico, it currently persists from Old Fort State Park near Fort Sumner downstream to about Brantley Reservoir, including at Bitter Lake National Wildlife Refuge. Within occupied reaches of the Pecos River it is generally uncommon to rare. Rio Grande shiners occupy flowing water environment found in large open rivers with laminar flows and a minimum of aquatic vegetation and larger streams with gravel, sand, or rubble bottoms.	Unlikely to occur in the proposed project area due to lack of perennial water bodies.
Speckled chub (<i>Macrhybopsis aestivalis</i>)	BLM Sensitive	The distribution and habitat recorded for specimens of this species do not indicate special requirements other than a flowing mainstream environment (Bestgen and Platania 1990). Speckled chub has been noted as widely distributed and exclusive to mainstream habitats in large portions of the New Mexican Rio Grande (Bestgen and Platania 1990). This species has not been verified in the CFO planning area.	Unlikely to occur in the proposed project area due to lack of perennial water bodies.
Mammals			
Big free-tailed bat (<i>Nyctinomops macrotis</i>)	BLM Sensitive	This species is usually associated with high cliffs and rugged rock outcroppings, but it also roosts in buildings, under lava caves and sometimes tree holes. It is found in urban areas, agriculture, barren land, desertscrub, scrub-grassland, swamp and riparian scrub, juniper savannah, oak savannah, shortgrass plains, alkali sacaton (<i>Sporobolus airoides</i>) grasslands, montane grassland, montane forest, evergreen forest, and marsh habitat.	Unlikely to occur in the proposed project area due to lack of high cliffs, rock outcrops, caves, or trees within the proposed project area.
Black-tailed prairie dog (<i>Cynomys ludovicianus arizonensis</i>)	BLM Sensitive	Native to grasslands including short- and mixed-grass prairie, sagebrush steppe, and desert grasslands. Also known to occur in mesquite-creosote bush, grama-needlegrass, tarbush-creosote bush, and burrowgrass-cholla type habitats.	Unlikely to occur in the proposed project area due to lack of sagebrush steppe, mesquite-creosote bush, grama-needlegrass, tarbush-creosote bush, or burrowgrass-cholla habitats.

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Cave myotis bat (<i>Myotis velifer</i>)	BLM Sensitive	This species is found primarily at lower elevations occurring in shortgrass plains, scrub-grassland, Chihuahuan desertscrub, Sonoran desertscrub, Plains and Great Basin swamp and riparian scrub, pine-oak woodlands, and oak savannah. Inhabits caves in the limestone region of southeastern New Mexico, and it has also roosted in barn swallow (<i>Hirundo rustica</i>) nests. It is never more than a few miles from a water source, such as canals, tanks, or creeks.	Unlikely to occur in the proposed project area due to lack of caves, limestone, and water sources within the proposed project area.
Fringed myotis bat (<i>Myotis thysanodes thysanodes</i>)	BLM Sensitive	A mid-elevation woodland bat that occurs in montane forest and woodland, mountain meadow, interior chaparral, scrub-grassland, alkali sacaton grassland, Chihuahuan desertscrub, swamp and riparian forests and scrub, Mohave desertscrub, upland Sonoran desertscrub, and occasionally in tundra.	Unlikely to occur in the proposed project area due to lack of habitat to support roosting and maternal colonies, including lack of water sources.
Gray-footed chipmunk (<i>Neotamias canipes canipes</i>)	BLM Sensitive	Mostly found in forested habitats such as piñon-juniper woodlands, but may also occur in shrublands and desert communities. It may occur in downed and dead trees, dense stands of mixed timber, and on brushy hillsides, particularly in rock crevices.	Unlikely to occur in the proposed project area due to lack of trees, dense stands of timber, brushy hillsides, or rock crevices.
Guadalupe pocket gopher (<i>Thomomys bottae guadalupensis</i>)	BLM Sensitive	Found in sycamore, cottonwood, and rabbitbrush riparian communities in the Guadalupe Mountains of southeastern New Mexico and western Texas.	Unlikely to occur in the proposed project area due to lack of riparian habitat. The project is outside the known range of the species.
Long-legged myotis bat (<i>Myotis volans interior</i>)	BLM Sensitive	Primarily a forest species occurring in chaparral, alpine and subalpine grassland, coniferous forest, scrub-grassland, Chihuahuan desertscrub, swamp and riparian forests and scrub, saxicoline brush, oak savannah, and woodland, Mojave desertscrub, and upland Sonoran desertscrub. Also occurs along watercourses and in deserts.	Unlikely to occur in the proposed project area due to lack of watercourses, riparian areas, swamps, and forest habitat.
Mexican long-tongued bat (<i>Choeronycteris Mexicana</i>)	BLM Sensitive	Mexican long-tongued bats of Arizona are found from the Chiricahuas to the Santa Catalinas and Baboquivaris. They may also be bound in southwestern New Mexico and southern California. They winter in Mexico, but do not hibernate there. Breeding takes place in the northern parts of the species' range (Monday 1993). They are found in sacaton grasslands, sycamore, cottonwood, and rabbitbrush oak savanna, and coniferous forest (Cook 1986).	Unlikely to occur in the proposed project area due to lack of sacaton grassland, savanna, or forest habitat.

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Pecos River muskrat (<i>Ondatra zibethicus ripensia</i>)	BLM Sensitive	This species inhabits waterways that have a constant and fairly stable source of water with dense aquatic and emergent vegetation surrounded by terrestrial herbaceous vegetation. Common muskrats prefer sloughs, marshes, oxbow lakes, streams, levees, dikes, and small lakes and ponds. Common muskrats build lodges in or near water using marsh vegetation.	Unlikely to occur in the proposed project area due to lack of perennial or intermittent drainage or wetlands.
Spotted bat (<i>Euderma maculatum</i>)	BLM Sensitive	In New Mexico, spotted bats have been taken in areas near cliffs, including piñon-juniper woodlands and from streams or water holes within ponderosa pine or mixed coniferous forest. It has also taken over cattle tanks in a meadow surrounded by mixed coniferous forest and near a ridge with cliffs and limestone outcroppings. The spotted bat is usually captured around a water source including desert pools or cattle tanks. It also may use rivers or desert washes as travel corridors.	Unlikely to occur in the proposed project area due to lack of cliffs, piñon-juniper woodlands, streams, water sources, and ponderosa pine trees.
Townsend's pale big-eared bat (<i>Corynorhinus townsendii pallescens</i>)	BLM Sensitive	Found in a variety of xeric to mesic habitats: scrub-grassland, desertscrub, semidesert shrublands, chaparral, saxicoline brush, tundra, open montane forests, spruce-fir, mixed hardwood-conifer, and oak woodlands and forests. This species is strongly correlated to the availability of caves or cave-like habitat, but it also uses abandoned buildings and rock crevices on cliffs.	Unlikely to occur in the proposed project area due to lack of caves or cave-like habitat, rocks, and cliffs.
Western small-footed myotis bat (<i>Myotis ciliolabrum melanorhinus</i>)	BLM Sensitive	This species is widely distributed in the western United States and found in many habitat types. Occurs in riparian wooded areas, bare rock/talus/cliffs, grassland and shrublands, and coniferous or mixed woodland areas. Generally inhabits desert, badland, chaparral, western coniferous forests, and semiarid habitats, as well as more mesic habitats in the southern part of its range. In New Mexico, the distribution of this species seems to be in the ponderosa pine zone, although they occur as low as desert and as high as the lower edges of the spruce-fir zone.	Unlikely to occur in the proposed project area due to lack of ponderosa pine, riparian woodlands, bare rock and cliff areas, and minimal grassland habitats.

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Yuma myotis bat (<i>Myotis yumanensis yumanensis</i>)	BLM Sensitive	Occurs in riparian communities, grasslands, semi-desert shrublands, mountain brush, woodlands, and desert habitats. It also occurs in arid canyon lands and Sonoran desertscrub. The species is associated with riparian areas and watercourses in the western United States. Roosts in caves, mines, cliffs, crevices, buildings, and swallow nests, including cliff swallows (<i>Petrochelidon pyrrhonota</i>).	Unlikely to occur in the proposed project area due to lack of habitat to support roosting and maternal colonies.
Reptiles			
Desert massasauga (<i>Sistrurus tergeminus</i>)	BLM Sensitive	This species was as far west as the Huachuca Mountains bajada in historic times, but now is virtually restricted to a few miles of habitat in the San Bernardino Valley above 5,000 feet (1,525 m) elevation (Rosen and et al. 1996). In the western portion of its range, massasaugas are most abundant on prairie wetlands, but they can also be found on dry shortgrass plains (Fitch 1992).	Unlikely to occur due to lack of prairie wetland or dry shortgrass plain habitat.
Dunes sagebrush lizard (<i>Sceloporus arenicolus</i>)	BLM Sensitive NM E	A habitat specialist native to the shinnery oak sand dune habitats extending from the San Juan Mesa in northeastern Chaves County, Roosevelt County, and through eastern Eddy and southern Lea Counties. This species has an extremely strong affinity for bowl-shaped depressions in active dune complexes referred to as sand dune blowouts, with a preference for relatively large blowouts and select microhabitat within a given blowout. Within its geographic range, the presence of this species is also associated with composition of the sand; they only occur at sites with relatively coarse sand.	Although the proposed project area contains marginally suitable shinnery oak dune habitat, this species is unlikely to occur due to the proposed project being outside of the species' known distribution area. During the December 2018 biological surveys this species was not observed. (BLM 2008a.)
Rio Grande cooter (<i>Pseudemys gorzugi</i>)	BLM Sensitive	This turtle is confined to the Pecos River drainage, including the Pecos, Black, and Delaware Rivers below Brantley Dam in Eddy County. This species is part of the CCA. All of the rivers listed above constitute key habitat areas for the species. Primarily a stream species occurring from 2,953 to 3,610 feet, preferring waters with slow to moderate current, firm bottoms, and abundant aquatic vegetation. Also inhabits stock tanks, ponds, large ditches, and even brackish tidal marshes. In New Mexico, most records are from streams with relatively clear water and rocky or sandy bottoms. Nests of this species are located in sandy soil, usually within 100 feet of the water.	Unlikely to occur due to lack of perennial aquatic habitat.

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Texas horned lizard (<i>Phrynosoma cornutum</i>)	BLM Sensitive	Inhabits arid and semiarid areas in the southwestern United States, characterized by open country with little vegetation. These areas often consist of grasses interspersed with cacti, yucca, mesquite, and other assorted woody shrubs and trees. In New Mexico, the species is associated with <i>Yucca-Prosopis-Ephedra</i> and <i>Larrea-Acacia-Fouquieria</i> habitat associations often in playas or on bajadas and mountain foothills.	May occur in the proposed project area due to presence of suitable habitat, including mesquite and other shrubs. This species was not observed during the 2018 biological survey of the proposed project area.
Invertebrates			
Monarch butterfly (<i>Danaus plexippus plexippus</i>)	BLM Sensitive	Occurs in migratory populations that complete an annual round-trip migration across North America, including New Mexico from April through October. This species breeds in the northern portions of its range and overwinters in the Mexican highlands or Pacific coast. This obligate species' habitat for reproduction includes milkweed plant species (<i>Asclepias</i> sp.) since milkweed is required for egg-laying and caterpillar development (Cary and Delay 2016). This species is also dependent on habitat with diverse and abundant flowering plants as a food source.	Unlikely to occur due to lack of obligate vegetation species.
Pecos springsnail (<i>Pyrgulopsis pecosensis</i>)	BLM Sensitive	This species is endemic to southeastern New Mexico, known historically to occur in Blue Spring and Castle Spring in Eddy County. This species has since been extirpated from Castle Spring. This species is part of the CCA implemented by the USFWS, the BLM, and the Center of Excellence for Hazardous Materials Management. It occurs on a mud and pebble substrate in its spring habitat, mainly along the edges of the water. Found on pebbles, gypsum silt, and to a lesser extent mud and submerged vegetation in a high-volume spring and spring run and associated marsh. The water is gypsum rich.	Unlikely to occur due to lack of perennial aquatic habitat.

Common Name (<i>Species Name</i>)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Area
Texas hornshell (<i>Popenaias popei</i>)	BLM Sensitive USFWS E NM E	Historically this species occurred in the Pecos–Rio Grande drainage. Currently, this species is found in four distinct locations, including the Black River and Delaware River in New Mexico and the lower Rio Grande and the Devil’s River in Texas. This species is part of the CCA. Associated with larger streams and a variety of substrates. Imbeds itself in softer bottoms, but lodges itself in cracks and crevices, where it is probably immobile.	Unlikely to occur due to lack of perennial aquatic habitat.

¹Federal (USFWS) status: E = Endangered, T = Threatened, C = Candidate, ENEP = Experimental Population, Non-Essential

New Mexico State status: NM E = Endangered, NM T = Threatened

Except where otherwise noted, range or habitat information for wildlife species is taken from BISON-M (2019), USFWS Information for Planning and Consultation System (USFWS 2019b), NatureServe (2019), Cartron (2010), and USFWS (2019a).

APPENDIX C. NMDGF PIPELINE TRENCHING GUIDELINES

TRENCHING GUIDELINES

NEW MEXICO DEPARTMENT OF GAME AND FISH

September 2003

Open trenches and ditches can trap small mammals, amphibians and reptiles and can cause injury to large mammals. Periods of highest activity for many of these species include nighttime, summer months and wet weather. Implementing the following recommendations can minimize loss of wildlife.

- Keep trenching and back-filling crews close together, to minimize the amount of open trenches at any given time.
- Trench during the cooler months (October – March). However, there may be exceptions (e.g., critical wintering areas) that need to be assessed on a site-specific basis.
- Avoid leaving trenches open overnight. Where trenches cannot be back-filled immediately, escape ramps should be constructed at least every 90 meters. Escape ramps can be short lateral trenches or wooden planks sloping to the surface. The slope should be less than 45 degrees (1:1). Trenches that have been left open overnight should be inspected and animals removed prior to backfilling, especially where endangered species occur.

On a statewide basis there are numerous threatened, endangered or sensitive species potentially at risk by trenching operations. Project initiators should seek county species list to evaluate potential impact of projects. Risk to these species depends upon a wide variety of conditions at the trenching site, such as trench depth, side slope, soil characteristics, season, and precipitation events.